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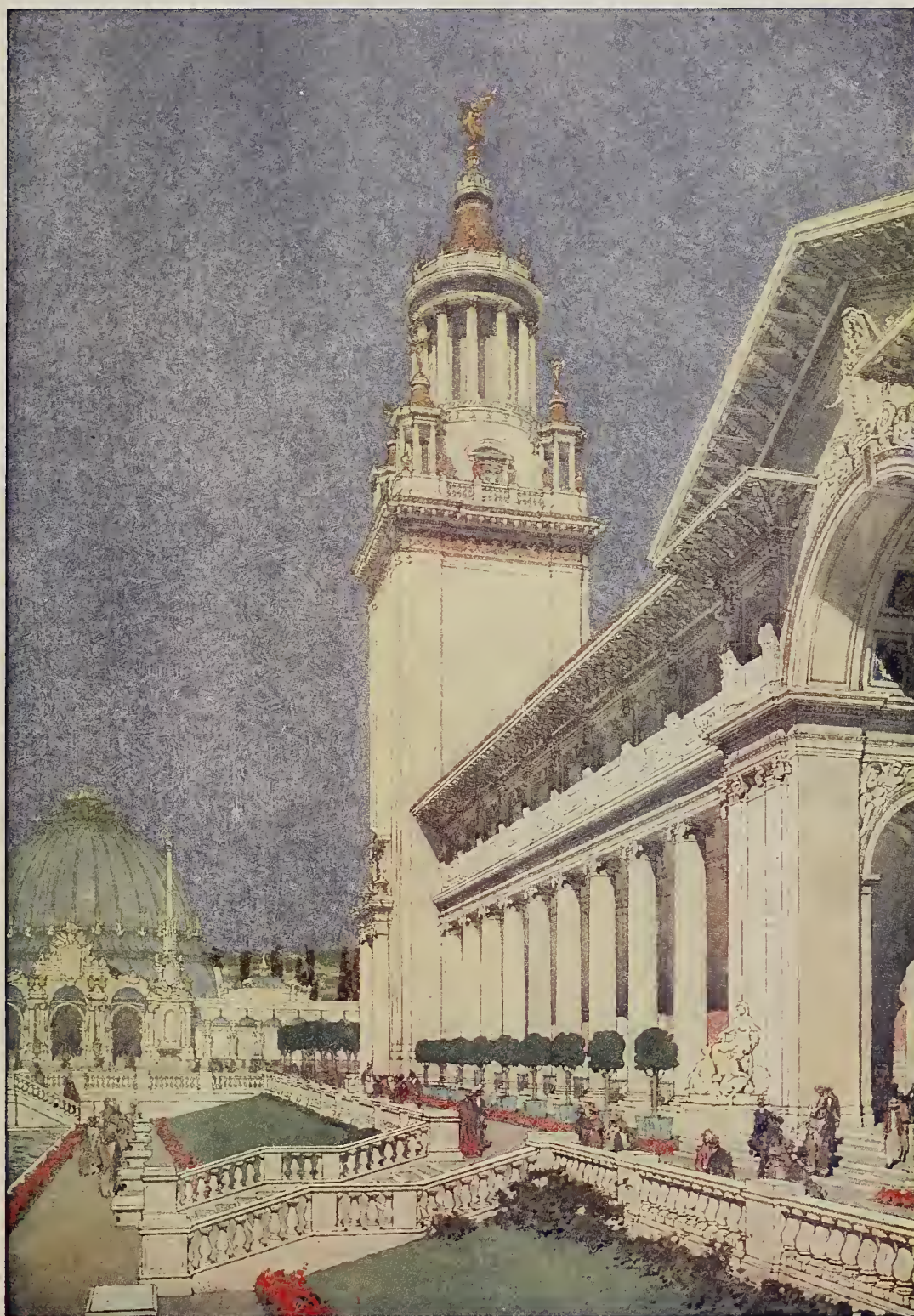
BETTER FRUIT

VOLUME VIII

MAY, 1914

NUMBER 11

EXPORT INFORMATION EDITION



Copyrighted by The Panama-Pacific International Exposition, 1913.

A TOWER OF THE PALACE OF EDUCATION

The Panama-Pacific International Exposition is the great celebration of the completion of the Panama Canal, signifying development and prosperity for the entire Pacific Coast. This new water route will open up the export markets of the world to the Pacific Coast at greatly reduced freight rates. It means much to the fruit grower, because the rate on boxed apples to European points will probably be less than half of the present rate. An immense palace will be devoted to agriculture and horticulture and the display of fruits grown on the Pacific Coast will be one of the great attractions. Every fruit grower should visit this exposition, which will be the greatest exposition that has ever been held and probably the greatest one which ever will be held.

SPRAY WITH IN-SECT-INE

SPRAYING TABLE

**IN-SECT-INE is only Compound ever mixed that
Kills BOTH SCALE AND INSECTS**

WHAT TO SPRAY AND WHAT TO SPRAY FOR	WHAT TO SPRAY WITH	TIME OF FIRST SPRAY- ING
APPLES— Bitter Rot Canker Worm .. San Jose Scale .. Scab	Spray with In-sect-ine Spray with In-sect-ine Spray with In-sect-ine	First appearance of rot. On first appearance worms. Spray in fall. As the buds are swelling.
ASPARAGUS— Beetle	Spray with In-sect-ine	Early spring. After cutting crop.
BLACKBERRY		
CABBAGE AND CAULIFLOWER....	Spray with In-sect-ine	On first appearance worms.
CELERY	Spray with In-sect-ine	On young seedlings.
CHERRY— Aphis	Spray with In-sect-ine	At first appearance. Before buds open. Just before blossoms open.
San Jose Scale .. Leaf-spot		
CUCUMBERS— Anthracnose .. Downy Mildew ..	Spray with In-sect-ine	When plants begin to run. When plants begin to run.
CURRENT— Leaf-spot Worm	Spray with In-sect-ine	As leaves are unfolding. When they first appear.
GOOSEBERRY— Leaf-spot Worm	Spray with In-sect-ine	Before leaves start. When buds are breaking.
Mildew		
GRAPE— Anthracnose .. Berry Moth Downy or Pow- dery Mildew .. Rot	Spray with In-sect-ine	Just before buds open. Before blossoms are ready to open. Just before blossoming. Just before blossoming.
MUSKMELON— Anthracnose .. Downy Mildew .. Leaf-blight	Spray with In-sect-ine	When plants begin to vine. July 25 to August 1. When plants begin to vine.
PEACH— Leaf-curl Brown Rot..... Scab	Spray with In-sect-ine Spray with In-sect-ine Spray with In-sect-ine	In March or April, or both, to make doubly sure. About time shucks are shed- ding from young fruit or on first appearance. Just as buds begin to swell.
San Jose Scale ..	Spray with In-sect-ine	In late fall or early spring, or both, if bad.
PEAR— Leaf-blight .. Psylla	Spray with In-sect-ine	Cut out the branches on first appearance on twigs. In winter, use commercial lime-sulphur for eggs. With starting of buds. On appearance of aphids. When leaves are half-grown. As buds are swelling or on appearance.
PLUM— Curculio	Spray with In-sect-ine	
Aphis		
Shothole Fungus .. Rot		
POTATO— Early Blight... Late Blight.... Potato Beetle..	Spray with In-sect-ine	When plants are 6 in. high. As for early blight to July. When pest appears.
RASPBERRY— Anthracnose .. Saw-fly	Spray with In-sect-ine	Before leaves open. When pest first appears. When leaves are half-grown.
Leaf-spot		
ROSE— Leaf-spot Slug	Spray with In-sect-ine	On first appearance fungus. On appearance of slugs.
STRAWBERRY— Leaf-spot	Spray with In-sect-ine	Soon after growth begins.
SQUASH— Aphis	Spray with In-sect-ine	Spray underside of leaves. As soon as pest appears.
Lady Beetle ...		
TOMATO— Anthracnose .. Leaf-blight ... White Fly	Spray with In-sect-ine	Soon after fruit begins to set. 3 weeks after transplanting. Spray underside of leaves thoroughly.
For Codling Moth	Spray with In-sect-ine	Spray thoroughly as soon as leaves are out.
For Tussock Moth	Spray with In-sect-ine	Spray thoroughly as soon as leaves are out.

United States Department of Agriculture
Bureau of Entomology
Washington, D. C.

Dear Sirs:

December 11, 1913.

Referring to sample of In-sect-ine submitted to this office by Mr. J. E. Keating in company with Mr. J. B. Porter, under date of October 9th, I have pleasure in advising you that this preparation has been analyzed in the Bureau of Chemistry and found to consist of a mixture of calcium and lead arsenates, Bordeaux mixture and some crude form of tar oil. It also contains small amounts of sulphates, chlorides, magnesium carbonate and a trace of ammonia.

The various ingredients which enter into the sample of In-sect-ine, as analyzed, are not present in large enough quantities, in the light of our present knowledge, to be injurious to plant life when used for spraying if applied in the usual manner and at proper dilutions. The compound is very similar to a Bordeaux mixture containing arsenate of lead and a little sulphur.

Very truly yours, L. O. HOWARD,

Chief of Bureau.

Spray Chemical Compounding Co.
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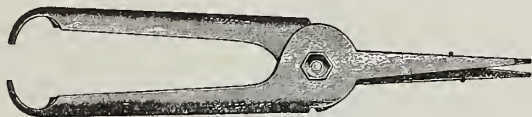
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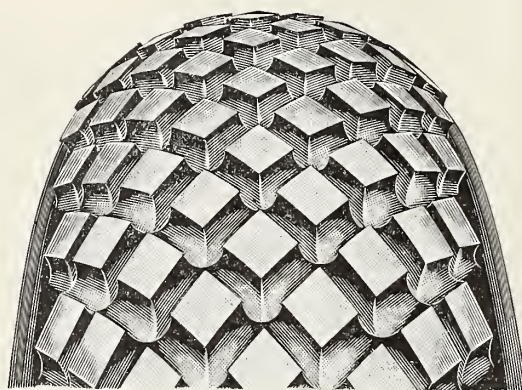
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(1514)

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Foreign Markets for Oregon Fresh Fruits

Compiled from Consular Reports by Stewart F. Lamb, under direction of Hon. H. B. Miller, Vice President Oregon State Horticultural Society

BETTER FRUIT is always alive to anything that may be of help to the fruit industry, not of the Northwest alone but of the entire continent. The facts and figures in this compilation are published with the hope that our readers will find them interesting and profitable.—EDITOR.

ARGENTINA

Apricots, cherries, peaches, and prunes are imported into Argentina from Europe, mostly from Spain and France. Fresh apples are received from the United States, Europe and New Zealand. Between January and September there are imported large quantities of fruits from Tasmania, which arrive in better condition than those from the northern hemisphere because they do not have to pass through so many changes of climate as the latter. The supply of fruit is said to be ample. The packages used are barrels and boxes, but the latter prove to be the most satisfactory on account of the risk of the fruit going bad in the barrels.

The business is in the hands of Italian firms and the import from the United States is quite an important one, as there arrive 3,000 to 4,000 boxes from the United States by each steamer during the months of September and January. The principal fresh fruit imported from the United States is the apple, the chief variety being the Red Rome Beauties, in boxes of 44 pounds gross, 40 pounds net, containing 72 to 97 apples per box. A limited number of barreled apples are also imported from the United States, but as stated above this style of shipment is considered risky on account of the fruit going bad in transit. On account of the lack of cold storage in the steamship lines from New York, shippers send these fruits to England, where they can easily obtain space on lines equipped with large freezing plants. In 1912 Santa Rosa, California, shipped fifteen carloads of Gravensteins to Buenos Ayres. The fruit was specially packed and refrigerated.

AUSTRALIA

In 1912 about 61,000 cases of apples from the United States arrived in Sydney, of which 49,400 cases were from Washington and 11,600 cases from California. There is no record that any fruit from Oregon was received. The steamship lines serving this port are the Canadian-Australian line from Vancouver, via Victoria; the Union Steamship Co., from San Francisco, and the Oceanic Steamship Co., from San Fran-

cisco. The imported fruit was carried by the vessels of these three lines. There are in Sydney two large cold storage companies catering to the fruit trade, and although their prices seem rather high still the fruit receives good care and attention. The space so far has been ample. The charges at present are: For the first week, including receiving and delivering, four cents per bushel case, thereafter three cents per week per bushel case. Wholesale prices during the past ten years have ranged from \$1.95 to \$3.89 per box.

Only highly-colored varieties of medium size and smooth shape are desired by the trade here. The following are

the supply, the demand being the greatest in early spring and fall. The home supply of fresh fruit to the Austrian market is so ample that supplies from abroad could not be shipped profitably when fruits are marketed in the northern hemisphere. Hothouse apples, pears and peaches and apples from Australia delivered in the winter command high prices for a strictly limited sale. There would be a good demand from the well-to-do classes in Austria for American apples and pears which could be sold when less hardy local fruits were not available.

BRAZIL

At present supplies of fresh apples and pears for Brazil are received from California, Oregon and Washington, and some from the Eastern United States. By reference to the statistics it will be seen, however, that both Spain and Portugal shipped more total fresh fruits to Brazil than did the United States, Argentina coming fourth on the list. California supplies most of the pears imported, and peaches, cherries and apricots come from Argentina and Uruguay. Fresh prunes are unknown. The supply of apples and pears during December, January, February and March is ample, but not during the balance of the year. The supply of peaches, cherries, apricots and fresh prunes is insufficient.

The quality of fresh fruits received from the Pacific Coast of the United States is usually satisfactory, but from other points it is not. The packages used are fifty-pound boxes, and barrels. The boxes from the Pacific Coast of the United States are satisfactory to buyers, but the barrels from the Eastern United States are not. All fresh fruits for Brazil should be packed in boxes. The demand for fresh fruits is greatest from May to November and the supplies are the lightest during these months.

The prices of fresh fruits in Rio de Janeiro are as follows: Apples—Wholesale, from \$3.24 to \$8.09 per hundred; retail, from \$1.13 to \$2.25 per dozen. Pears—Wholesale, from \$6.47 to \$12.94 per hundred; retail, from 97 cents to \$1.94 per dozen. Peaches—Wholesale, from \$9.71 to \$16.18 per hundred; retail, from \$1.29 to \$2.59 per dozen. Cherries—Wholesale, in twenty-two-pound boxes, \$4.85 to \$8.09 per box; retail, 30 cents to 74 cents per pound. Apricots—Wholesale, \$1.62 per hundred; retail, 32 cents to 81 cents per dozen. All varieties of American apples and pears, especially the former, are

Features of this Issue

FOREIGN MARKETS FOR OREGON
FRESH FRUITS

SUB-CENTRAL MANAGEMENT

HOW TO RECOGNIZE SOME COMMON
PLANT DISEASES

TRANSPORTATION OF FRUIT BY
STEAMER

CO-OPERATIVE FRUIT ORGANIZATIONS

RELATION OF THE PEACH INDUSTRY
TO THE CANNERY BUSINESS

some of the well-known sorts which are good sellers: Jonathan, Winesap, Esopus Spitzenberg, Wealthy, Gravenstein, McIntosh Red. Other well-known varieties, such as Missouri Pippin, Rome Beauty, Ben Davis, Wagener, Canada Red and Baldwin, are not in demand and do not bring anything like the prices of the varieties first mentioned. It should be noted that size is very important. The trade in Sydney demands an apple about two and one-half inches in diameter; larger or smaller apples are not nearly so salable.

AUSTRIA-HUNGARY

The supply of fresh apples, pears, peaches, cherries and prunes received in the northern part of Austria come largely from local growth. In years of low yields a large supply comes from Southern Austria, France and Italy. The supply seems to be ample for all needs and the quality is excellent. Fruit shipped into Austria from abroad is packed in wooden boxes holding 55 pounds, which is acceptable to the trade. The prices vary according to

very popular, providing they are large (fancy) and aromatic.

The fresh fruit trade in Rio de Janeiro is controlled by one company of importers there, and as long as the present retail prices are maintained there is no probability of increasing the demand. Attention is called to the difference between the landed cost of a box of apples and the retail selling price, the former from \$4.00 to \$5.00 per hundred and the latter from \$1.13 to \$2.25 per dozen. It can be easily understood how reluctant a person is to pay fifteen cents for an apple.

The purchase of fruits of all kinds from the United States is made through large New York wholesale houses which naturally make a profit on their sales. It is also noticed that dried apples, pears, peaches and apricots are all sold at practically the same price in Brazilian markets, while packers' prices in the United States are five to ten cents per pound difference in these goods. It is believed that these unsatisfactory conditions would be overcome if Brazilian importers would deal directly with growers' associations and packers in California, Oregon and Washington. It is noticed here also that while California goods are well known here fruits of all kinds from Oregon and Washington are sold as "California goods." The local consul at Rio de Janeiro believes that if one or more of the Pacific Coast fruitgrowers' associations were to open a branch office at Rio de Janeiro and another at Sao Paulo, the former city with a million population and the latter with four hundred thousand, the demand for American fruit and fruit products would be increased in Brazil sufficiently to more than pay for such outlay. The opening of the Panama Canal should be a still further incentive to the adoption of this suggestion, as the Pacific Coast goods for Brazil will save the present railway freight across the continent and handling charges at New York. With the lumber, fruits and other goods from the Pacific Coast to Brazil, and coffee as return cargo, steamship freights should be as low as from New York.

The freight rate from New York to Rio de Janeiro on fruit carried in cold storage chambers, on the only line thus equipped, is at present \$32.08 per ton, which makes the estimated landed cost of a box of apples at Rio de Janeiro about \$6.00. These same apples sell at retail at from \$9.00 to \$18.00 per hundred. It is also thought that if a reasonable rate could be obtained from New York direct that American apples could be sold here in much larger quantities. This cold storage company, which controls the imported fruit business in Rio de Janeiro, further states that its apples and pears are all purchased through the New York and Boston houses, whether the fruit comes from the Pacific Coast or Eastern States.

On account of the decline in price and increased world competition in the two leading crops of Brazil—coffee and rubber—the cost of the necessities of

life in that country has risen to such a point that living has become extremely difficult, especially for the laboring classes, and the government is considering the reduction of import duties on certain imported food products.

If the fruit associations would send an agent to Rio de Janeiro to make proper representations to the government toward having the duties reduced on canned goods (19 cents per pound) and the existing system of inspections modified the local consul believes the situation could be adjusted and a large trade in American canned goods established. The duty on American grape juice was reduced in 1911 through the efforts of an agent here, although the year previous it had been raised.

BELGIUM

Present sources of apple supply for Belgium are principally London and Southampton. These apples come from the United States, Canada and South Africa. There is an ample supply obtained from England, but there is never a big stock on hand in Antwerp, the arrivals of shipments are irregular and there is a great lack in the variety of apples shipped. The time between London and Brussels is forty-eight hours by boat. Only the best quality of apples can be sold in Belgium, for great quantities of inferior quality apples are raised locally and sold at very low prices. Barrels and boxes are the usual forms of packages, but boxes are preferred, as they arrive in better condition and keep better. The usual box is 20x12½x9½ inches. The Belgian prices depend on the prices in London. As in all northern countries, the demand is the greatest from December to June and supplies greatest in January and February. The most popular varieties of apples are the Newtown and the Jonathan. There is an increasing demand for apples in Belgium. If a large stock could be kept in Antwerp, with a great variety to choose from and regular shipments could be made, the importation into Belgium would undoubtedly increase greatly and Antwerp would not only be the market for Belgium but also for Holland, Germany and France. Pears and peaches are imported in smaller quantities than apples, but no cherries, prunes or apricots are imported. The pears come chiefly from South Africa, being packed in boxes.

CHILE

There is no record that any fresh apples have entered Valparaiso during the last three years and none have ever been imported as far as found. There is not much of an opening for fresh apples, since very fine ones are grown in Chile, and there are no cold-storage facilities. Apples are not in as general use here as in the United States, being sold at two to five cents United States gold each, and very seldom by the bushel. They can be used only by the wealthy people.

CHINA

The total imports at Hongkong of apples of all grades from all countries

are above 11,000 cases of 40 to 50 pounds, of which 2,000 cases were "Seattle" apples, largely from the Hood River Valley; about 6,000 cases were cheap apples from San Francisco, some 2,000 cases were apples from Japan and North China and 1,000 cases were from Australia. The Hood River apples were shipped on orders placed by dealers here through importing commission houses; the San Francisco apples consisted of second-rate fruit raised by Chinese market gardeners in California and were mostly sent for sale on consignment; the Japanese and North China apples were generally on consignment, while the Australian apples came on orders. The Australian season complements the Oregon and Washington season, and the Australian apples supply the market for the better grade fruit when the Oregon and Washington fruit is out of season.

The great mass of the trade is in second or lower grade apples, these being sold largely to the natives. The American apple has a high reputation among Chinese and foreigners in the Far East, and a comparatively low-grade American apple has a big market advantage over fruit from other parts of the world. It competes with apples from Japan and North China in the local market. In an ordinary year close to 10,000 cases of these low-grade apples can be sold in Hongkong. Early California apples often bring as high prices as the better Northern fruit which comes later. Probably \$1.44 gold per case is a fair average price for this low-grade apple. The Japanese apples are a little lower in price and Chinese apples still lower, both the same grade as the American apple. The Oregon and Washington apples as a rule are not first-grade fruit, but a fair line of seconds. They sell wholesale from \$2.40 to \$3.12 gold per case and retail for 7.2 to 12 cents gold per pound. The Japanese and North China fruit lacks flavor and firmness, but some is very attractive in appearance. There is a limited import of high-grade American fruit in the winter at, say, \$3.84 gold per case.

Australian fruit comes from April to September to supply the fine market taken by American fruit the rest of the year; Australian apples are generally first-grade fruit and bring about \$2.88 gold per case. Fruit from Australia must be brought in cold storage, since it is a long trip across the Equator. Most American fruit is brought without special or cold storage. There is a considerable trade in these apples from Hongkong to Canton and to some other South Chinese ports, but this trade is limited by lack of cold storage in the ports shipped to, and of shipment facilities. The Philippine trade in American apples, formerly large, has been destroyed by the fact that American apples are now admitted free of duty when coming direct from the United States.

The apple market in Hongkong must be handled with delicacy. Hongkong is in the tropics and fruit must be put in cold storage to keep well for any

length of time. Cold storage in Hongkong is expensive. The demand for foreign fruit is limited and prices for it are usually far beyond the reach of the ordinary Chinese consumer. To sell fruit, therefore, requires low prices and the least rise in price shuts off consumption in a most radical way. The market is very easily overstocked, and when overstocked it goes to pieces entirely. Accordingly it has been found necessary to import apples in small quantities, i. e., where an order is given for 1,000 cases delivery at Hongkong will generally be made in lots of 200 to 300 cases each. In this way much of the expense of cold storage is avoided.

One of the greatest drawbacks to the trade is fluctuation in price, for the local merchant must know exactly what his apples will cost him before he can know how many apples he can sell. As a rule prices should be quoted in 1,000-case lots, and the quotations should be firm over enough of a period for the Hongkong importer to canvass the market and place the lot at the price named. Sales made to the Hongkong trade through import commission houses are usually on thirty days' credit, but apparently the matter of credit terms is not very important, other things being equal. Cold-storage space in Hongkong is available in two establishments and can generally be had without trouble, the total space available for public use being sufficient for any demands likely to arise for some time to come.

The matter of the exchange value of silver has, of course, an important bearing upon imports of fruit. The values above given have been converted at 48 cents gold to the Hongkong dollar. High exchange value of silver gives a strong stimulus to trade, since gold prices represent less silver and silver goes farther in purchasing products in gold; the reverse is true when the exchange value of silver is low. At times the matter of exchange is almost a controlling factor in the trade.

The consumption of American apples at Canton is very small and the local merchants advise that it would be best not to ship direct, but to handle the business through agents at Hongkong. The duty is fourteen cents gold per thirty-two-pound basket. The kinds usually handled are the Oregon and Hood River Valley. A superior variety was stated to retail at \$2.50 to \$3.50 per thirty-two-pound basket. There are no public cold-storage facilities.

The market for American apples in Shanghai is found principally among the foreign residents, although there is some consumption among the Chinese. As a general rule, however, the price of the American apple is too high for the native consumer, and this permits fruit from Australia and Japan to compete successfully with the American product in this district. Shanghai has a foreign population of about 12,000.

The trade in American apples in the Tien-Tsin district is quite small. 700 to 900 boxes were received in 1911, imported in lots of 40 to 250 boxes. The varieties were mostly Winesap and

Black Ben Davis. These apples were about equally divided among the California, Washington or Oregon and British Columbia fruit. No steamer lines come direct to Tien-Tsin from the United States, but the fruit has to be transferred at Kobe, Japan, or from Shanghai, China, and forwarded to Tien-Tsin. There are no cold-storage facilities in either Tien-Tsin or Peking. The average wholesale price of apples laid down in Tien-Tsin is \$2.00 to \$2.50 gold per box. As American apples are bought only by foreigners there is no great sale for them here. There are approximately 2,500 foreigners in Tien-Tsin and 500 to 700 in Peking, besides 6,000 or 7,000 foreign troops stationed at the two places. The market among the troops for apples is quite small, so the only sales would be to the 3,000 foreigners.

DENMARK

Home-grown red apples retail at five to seven and one-half cents per pound and yellow apples at ten to eleven cents per pound. Apples are popular fruit and their sale is rapidly increasing. The price of Baldwin and York apples average \$3.50, exclusive of brokerage; some Winesaps have sold as high at \$4.30 to \$5.00. The varieties of boxed apples imported from the United States are Winesaps, Jonathans, Blacks and Lawvers, all red apples. The most popular apple is the California Newtown Pippin, four tiers, extra fancy grade, fifty-pound boxes, each apple wrapped in paper, the surface apples in papers with packer's name. The Wenatchee apples were introduced here last season through the Hamburg fruit firms. Some of these, however, are said to have been rather large for this market.

As the consumption of apples in Denmark is increasing there ought to be a continually expanding market here for the American apples, which as a rule are much preferred to any others. The grade should always be strictly "extra fancy," and as the transportation takes about twenty-four days special care should be taken in the selection of the apples (hard and crisp) in order to secure a safe arrival. Cold storage in the American sense is unknown here.

The following are the imports of apples in barrels for 1909: From the United States, 7,822; Germany, 21,662; England, 8,451; other countries, 6,056, making a total of 43,991 barrels. Besides the direct imports of American apples from the United States considerable quantities of American fruit is imported via Hamburg and other German and English ports.

CUBA

The Spanish-speaking people, especially those who reside in Cuba, are not by nature fond of the tart fruits of Northern countries. They prefer those fruits which are sweet, and as a result the fresh fruits of the tropical countries or the highly-sweetened fruit products of countries of the temperate zone practically monopolize the markets. The introduction of fresh fruits

from the United States is of comparatively recent date, and the manufactured or prepared products, to meet the local taste, still have to be of high-syrup percentage, either through reduced natural juices or by sugar. In fresh fruits, apples and pears come in constantly; in dried fruits there is a limited demand for all except berries; and in canned fruits, with syrups going as high as 35 per cent, there is a broad variety of importation, though the volume is not large.

The apples from the Northwestern States of the United States are in the greatest demand, owing to their appearance, flavor and ability to hold up under climatic changes. Few apples are imported from other countries. The pears almost exclusively come from California. Peaches, cherries, prunes and apricots are rarely seen. The fresh fruits are usually shipped in boxes, except the cheap Eastern apples. The Oregon apples are usually about 88 to the box and the California pears about 70. Landed in Havana, with all charges, including duties, paid, these fine apples cost the importer about \$3.85 and the pears about \$4.00. At wholesale these prices are advanced about 30 per cent, and the individual consumer pays about ten cents apiece for an apple or pear. Low-grade apples are retailed for two to three cents each.

ENGLAND

Most of the apples imported into England are received from Canada, the United States, Australia, Tasmania, Portugal, Italy, Spain, Netherlands and Germany. The American shipments are largely from Oregon, Washington and California. The supply is usually quite ample, large quantities being received from Australia and Tasmania. Prices the past season (1912-13) were usually quite low, and in view of the increasing production of the producing countries there is no likelihood, in the opinion of English importers, that there will be any marked improvement in prices.

For American apples the prices ranged from \$1.22 to \$1.94 for Newtowns and from \$1.09 to \$1.94 for the red varieties, for the half box choicest fruit; whole boxes \$2.18 to \$4.86 for choice fruit. Australian and Tasmanian apples brought the following prices. Tasmania is a large island south of Australia and statements concerning one apply to the other: Jonathans, \$1.58 to \$1.77 per box of 40 pounds; Esopus Spitzenberg, \$1.58 to \$1.77 per box; Kings, \$1.58 to \$1.64 per box. Australian apples commence to arrive in April, thus not competing with American fruit. The most popular varieties of apples on the market are Newtowns, Spitzenbergs, Ortley, Delicious, Winter Banana and Jonathan.

Belfast, Ireland, presents an attractive field for shippers of apples. This town delivers apples over a territory containing about 1,000,000 people. In the apple season it consumes about 2,000 barrels and 500 boxes of apples per week. The principal barrel apples

wanted at this market are the Greenings, Baldwins, Northern Spies, Albe-marle Pippins and Ben Davis. The principal box apple is the Newtown. Cold storage is not necessary, as the climate is very even.

Belfast receives its apple imports from Liverpool. The dealers buy in the Liverpool auction market, which offers them the advantages of selection, quick deliveries and sometimes low prices. But there is the charge for extra brokerage at Liverpool and the cross-channel freight charges to be taken into consideration. Because of this some local importers believe that direct consignments to Belfast would sell readily and bring better prices than in the Liverpool market.

Most of the pears are received from France, Belgium, the United States, Australia, Netherlands, Germany and Canada. The supply is generally sufficient. Receipts from Australia are increasing yearly. They are usually packed in boxes and half boxes, full boxes containing about fifty pounds to the box, which package seems to be satisfactory. The prices range from \$2.19 to \$2.92 per half crate. The principal varieties are the Comice, Winter Nelis, Bartlett, Anjou and Buerre Hardy.

The principal supplies of peaches are from France, United States, Belgium and South Africa. They are regarded as a luxury and the sale, on account of the high prices, is greatly restricted. Most English peaches are raised in hot-houses. An English dealer states: "In order to popularize the American peach in England it is necessary that it be sold at a popular price." More could be sold if they were cheaper. The mode of shipment of this fruit is in the experimental stage, the most successful package consisting of three trays, each containing 24 peaches, arranged one above the other, with the lid nailed down. In this way they do not bruise and the package seems to give satisfaction. The prices received for Wenatchee peaches packed in this way, and also packed in excelsior wool between the fruit, 24 to the tray, was from 49 to 73 cents per tray; for a shipment of Yakima fruit, in boxes of 72 fruit, from 82 to 91 cents per box. However, this latter shipment was received on the eve of the Jewish holidays, which curtailed the demand.

The low prices which have been received thus far and heavy expenses incurred in placing the fruit on the British market may not provide any special inducement to shippers, but American fruitgrowers should bear in mind that the completion of the Panama Canal will so greatly improve the transportation facilities that the matter of exporting peaches to the United Kingdom will be worthy of their most serious consideration. The only variety on the London market is the Elberta. The more delicate fruits to all European markets might be well packed in paper excelsior. Belgian peaches arriving in May sold from 73 cents to \$3.65 per box of 12, while South Afri-

can peaches received in February and March brought from \$1.46 to \$1.83 per box of 15 to 24. This emphasizes the fact that they are regarded as a luxury. In passing it may be noted that the South African peaches are seventeen days on the road.

Cherries are received from France, Belgium and The Netherlands, chiefly from France, in boxes containing three or four pounds, according to the size of the fruit, which packages seem satisfactory. The prices received range from \$6.21 to \$7.42 per hundredweight (112 pounds), or five and one-half to six and one-half cents per pound. The supply of cherries arrives in June and July.

The principal supply of prunes comes from Italy, being small, but sufficient for requirements. Apricots come chiefly from Southern France and the United States. Are used more for making of jam than as fresh fruit and are received in the same style package as is the peach. Plums (Italian prunes) are usually shipped in the Washington and Oregon standard package, four small boxes in a crate, the prices being from \$1.22 to \$1.92 per crate.

The variety of apple grown throughout the Pacific Northwest most in favor in Great Britain is the Newtown Pippin. Sizes running from 104s to 144s are most salable on this market, although late in the season we can take a smaller size fruit, that is, running from 163s to 188s. For early varieties the Gravenstein, Wealthy and McIntosh meet with a good demand, especially when the crop is short in the barrel-apple sections. The Jonathan is another favorite early variety. For late apples the Spitzenberg, Stayman Winesap, Rome Beauty, York Imperial and Winesap follow about in the order named. A good many Ben Davis, Black Bens, Arkansas Black and others of this quality come forward as very late keepers and meet with a fair demand at lower prices than any of the first-named varieties. The sizes for the red varieties most in favor run from 104s to 144s. Smaller sizes do not meet with favor.

FRANCE

Fresh fruits are raised in great quantities in France and the demand for foreign fruits is governed directly by the extent and quality of the home-grown supplies. In unfruitful seasons the American fresh fruits are imported to fill the deficiency caused by the small local production. Many of the apples and pears imported were for making cider and perry. The fruit exported by France is in direct competition with the American fruits in European markets. The following table of exports will give an idea of the distribution of French fruits and the extent to which they enter into competition with American fruits:

EXPORTS 1911—FRESH APPLES AND PEARS	
For the Table	Tons
	Metric, 2,204.6 lbs.
To Great Britain	8,276
To Germany	3,086
To Netherlands	194
To Belgium	8,436
To Switzerland	848

To Italy	145
To Algeria and Tunis	5,190
To other countries	1,876
Total	28,051
Equal to, pounds	61,824,404
For Cider Making	
To Great Britain	1,766
To Germany	122,726
To Netherlands	978
To Belgium	15,279
To Switzerland	1,597

Total	142,346
Equal to, pounds	313,815,091.6
Table exports, pounds	61,824,404

Grand total, pounds.....375,639,495.6

OTHER FRESH FRUIT

Peaches, Cherries, Apricots, Prunes, Berries	Tons
	Metric, 2,204.6 lbs.
To all countries	41,054

By reference to the imports table it will be seen that the exports of fresh fruit greatly exceed the imports. The exports in 1911 were 211,451 tons and the imports only 18,920 tons, this being a year of comparatively light crop. The importations of fresh American fruits to Paris have been limited almost exclusively to apples, and these mainly in seasons following poor local crops. The apples are retailed by the better class of fruit and grocery stores, and always at high prices, from five to eight cents apiece being frequently charged for apples of high quality and size, neatly packed and in perfect condition. Apples for the Paris market should be wrapped in soft paper and packed in cases with cardboard spaces to keep them separate and prevent danger of bruising. However, a leading apple grower from the Willamette Valley visited the Paris market and found that his association had nothing to learn from Europe in the art of packing choice apples.

American fruit exports to Paris can never be developed to their full limit until the fruitgrowers' associations of the Pacific Coast States arrange to combine and establish a general agency in Paris, where samples and stocks could be displayed, sales and contracts made, prices quoted from day to day and the whole business of importation and distribution managed by experienced men trained in American methods. Such a depot would become a permanent exposition and mart of American fruit exporting interests. The chief reasons against its being established are the amount of capital and effort required, the lack of cold-storage facilities on regular steamship lines to French ports and the uncertainty of demand and prices in seasons of abundant crops of French fruits.

GERMANY

Australia is a heavy shipper of apples to Germany, but there is very little direct competition between American and Australian boxed apples, as the season for American apples runs from October to April, and for Australian apples from April to the end of July. Both barrels and boxes are used in shipping American apples, the barrels coming principally from the Eastern States and Canada and the boxes from the Pacific Northwest. A leading im-

Continued on page 39

Transportation of Fruit Through the Culumbia Gateway

By W. D. B. Dodson, Trade Commissioner Portland Chamber of Commerce

MARKETING Northwestern fruit through the Columbia gateway is the greatest single prospect before the growers of this region. On this line of commerce may be found the cheapest possible transportation rate. Whatever other route fruit from a major portion of the Columbia basin, Southwestern Washington and all of Oregon is made to take when destined for Europe, South America, Asia, Australasia, South Africa and the immediate Atlantic seaboard, the transaction represents a higher charge upon the producer and the consumer than is necessary. When the Panama Canal steamships come to this port, and when the local rate to this port is made proportionate to that found in the other great producing districts of the country, this route through the Columbia gateway may be made supreme as a mainstay to the fruit man.

To get the low costs of marketing through the Columbia gateway, an extensive preliminary work will have to be done. In the first place the great traffic managers will have to be provided with the most exhaustive data on the present and prospective conditions here. They will have to be shown that we have possibilities of a mammoth order, which will be realized when we co-operate in developing them. These transportation companies want business. They also are competent to see ultimate business of a large order rather than immediate conditions to the exclusion of the future. But transportation men are human, with many human limitations. They cannot appreciate the future of a fruit condition any better, if as well, as the grower, the merchant busy with marketing the product or the profound student of economic conditions. Only when the fruitgrower, the merchant and all others vitally and deeply connected with an industry like fruit production get into the closest touch with the transportation managers may we have assurance of the most accurate and faithful preparation for meeting coming requirements.

So accustomed has Portland and the Columbia basin been to waiting for nature to assert itself, in giving this region the Northwest's business, that we have done little in preparation. We have waited for the forces of gravity to work out its economies in bringing produce down the Columbia River to tidewater. We have waited for the steamboat to exercise its influence as a balancing and compelling force in securing lower rates on water-grade routes than across mountains. But our waiting has been attended by little preparation. In the meanwhile, nature left to herself, has brought comparatively little business to Portland. Energetic men have rolled the commerce across the mountains, on expensive routes, away from Portland, because we did not have our water courses

properly opened, because we did not have the necessary deep-sea shipping facilities, and were without many of the other things men provide to control and handle commerce. I wish to declare that a new order has arrived. From this date on, the Columbia River and its ports will not play the waiting game. They will go out to profit by conditions furnished them. The people here realize that the scheme furnished by nature will prove worthless unless supplemented by the most energetic work we may do to use the conveniences placed at hand. It is especially true in respect to fruit marketing. While we have the natural, most economical route to the markets of the world, we find that unless we make tireless use of these natural facilities and add the working machinery of human effort no fruit will come this way in its movement to distant consumers.

To get the most definite possible statements of facts in regard to the prospective steamship rates on fruit through the Panama Canal, the Chamber some time ago, over the signature of its secretary, addressed to several companies which are understood to plan entering here the following inquiry: "Royal Mail Steam Packet Co., Hamburg-American Line: President Bateham of the Oregon State Horticultural Society has informed the Chamber of a request he sent your company for some statement as to the probable water rate through the Panama Canal on fresh fruit. The Chamber is eager to have the subject referred to therein given your most considerate attention. As your traffic department is no doubt aware, there is a tremendous tonnage possibility in the fresh-apple movement of the future from three Pacific Northwest States, viz., Oregon, Washington and Idaho. Some conservative orchardists estimate that this could be made 20,000 carloads next year, with an ultimate possibility in 1920 of from 45,000 to 100,000 carloads. Unquestionably, the soil and climate and other natural conditions do exist to produce far more fruit. With equal certainty I might say the production and marketing will develop along certain and assured lines if transportation rates and methods of handling are an inducement. We have for several years expected that the Panama Canal would give us rates to Europe which would make possible a very important increase in our apple and other fruit shipments to that market. When referring to fruit generally, I speak of canned and dried production as well as a growing line of by-products. Many thousand acres of orchards have been planted in the Northwest in the past few years in the hope and assurance of a much improved market after the opening of the canal. Although the time for opening the canal to commercial traffic is near, we have not received from yours or other lines any fairly

certain assurance of what rate may be quoted. I need not emphasize the point that this is a matter of the utmost importance to our growers. Many of them are passing through a stage of uncertainty. Their continued production of fruit will be largely controlled by their confidence in future conditions. These and many other considerations we present as reasons why we are so urgent at this time for something of a tangible nature on the prospective movement by water. We also realize that to get a considerable water-borne traffic in fruit we must secure lower railway rates from several of the important producing centers tributary to this seaport. The Chamber and other shipping interests have been urging to pave the way by taking up in an extensive manner the study of the local rate from producing point to tidewater. In doing this, and in fact in any other important work bearing on this subject, it would be of inestimable benefit to know approximately what rate the steamship lines may be disposed to quote to Europe. The annual convention of the horticultural society next December appeals to us as a desirable date when we might make to the public some important announcements on the prospective lines of fruit traffic. If in deciding any matters connected with your prospective rates we can furnish you specific data on present production, plantings, or local railway or river rates, we will be glad to undertake the duty upon receipt of suggestions from you."

In response to this line of inquiry, most of the companies said that they could furnish no definite data so early in respect to their fruit rates. Neither the Atlantic seaboard nor the European companies want to give out any final statement. The intense rivalry that is expected to prevail among canal lines naturally leads to the utmost caution in early announcements. But further than this natural phase of business, it seems clear to the officials of the Chamber that the big companies yet lack absolute data upon which they can predicate canal traffic conditions in the fruit trade. The tone of all is one of inquiry. The reply of the Frank Waterhouse & Co., representing the Royal Mail Steam Packet Company, may be regarded representative of the general thought. Mr. Waterhouse wants to know what the fruit men themselves think of shipping conditions and what rate they themselves feel they should have. His inquiry is as follows: "Edmund C. Giltner, Secretary Portland Chamber of Commerce: Replying to your letters containing a request that your Chamber be informed as to the probable water rates, through the Panama Canal, on fresh fruit: I have received no communication from President Bateham of the Oregon State Horticultural Society on this subject, although I think Mr. E. J. M. Nash, late

special representative for the Royal Mail Steam Packet Company on this Coast, did receive a letter asking for this information, to which I presumed he had replied. Mr. Nash, who entered the employ of Frank Waterhouse & Company October 1st, is now en route to Europe, and it is possible, in the hurry of departure, he has overlooked replying. If so, I beg to apologize to Mr. Bateham. I am perhaps as much interested in the development of foreign markets for our fruit as anyone in the Northwest. I have 200 acres of producing orchard in the Yakima Valley and fully realize the necessity of developing foreign markets for our fruits. Before forwarding your letter to London, for the purpose of securing more definite information than I can now give you, I would like you to advise me what rates the Oregon State Horticultural Society or the Portland Chamber of Commerce believe will be necessary on apples, peaches and other fresh fruits, and also on canned and dried fruits, in order to develop European markets of sufficient size as to materially assist the fruit-growing industry in the Northwest. I think the European lines which we will represent after the opening of the Panama Canal will be guided to a considerable extent by the advice they receive from me in making these rates, so I wish to be thoroughly posted before I submit your letter or make any recommendations in connection therewith. I have already persuaded the Royal Mail Steam Packet Company to construct refrigerated compartments in the steamers it is now building for the European trade. I believe, however, that Northwestern apples can be safely carried through the Panama Canal to Europe without refrigeration; that they can be so stowed in pierced 'tween decks and shelter decks, where they will get plenty of ventilation to enable them to arrive at destination in first-class shape, without paying refrigerator rates. During the last six years we have carried a large amount of apples on steamers controlled by us to Australia without refrigeration and delivered them in good shape at destination. Within the last two years we have made similar deliveries in satisfactory shape at Manila. The voyage from North Pacific ports to Europe, via Panama Canal, will be made in approximately thirty days, perhaps less time, and in the fall and winter, when the fruit moves, there will be very few days of warm weather experienced on these passages. I should like to have the opinion of the state horticultural society on this point. I know that large markets can be developed in Europe for our fruit, both fresh and dried, provided it can be delivered there at prices that will enable the masses of the people to use it. Will you be good enough, therefore, to advise me what rates you consider it will be necessary to secure on all classes of fruit, both for cooling chamber service and also when shipped in well-ventilated 'tween decks or shelter decks as ordinary

cargo. I shall be exceedingly glad to promptly take the matter up with London and try and secure the rates you think will be necessary. I shall be glad to meet President Bateham, yourself or anyone else interested in this subject, here or in Portland, at almost any time you desire, if you will give me two or three days' notice. Yours very truly, Frank Waterhouse."

In surveying this situation, the Chamber of Commerce concluded that the whole situation would have to be presented in more comprehensive, detailed and accurate form than ever before. Mr. Waterhouse wants the advice of the experts in the business, and declares a willingness to give ear to any advice on constructive work. If he were guided by one man, error might creep in. Only when he has the consensus of the expert opinion of the Northwest will he be put in the position to do the best work in behalf of our fruit industry, as he desires. Assurances have been given that the other steamship lines want to get down to bedrock in respect to this situation. The Chamber concluded that to do this right a lot of expert work would have to be done. This led to concerted effort among the local men who have deep knowledge of the subject, when much further and more searching requirements were unfolded. Statements have been received from some of the leading agencies. To get all in concrete shape, the Chamber requested Mr. C. A. Malboeuf, an expert in both traffic affairs and fruit handling, to get up an exhaustive report, covering the whole rate situation and market prospects, with reference to most likely lines of expansion of trade. This report is about finished and will later be published by the Chamber and given the widest possible circulation. Growing out of this effort and the co-operation of the many offering their assistance and knowledge, we trust that there may soon be developed an association or league that has the machinery for broader work in fruit transportation matters than has yet been undertaken in the Northwest, and which will go out to insure use of the most economical routes of commerce to the consumers of the world.

I do not even think I should hazard on the facts we have yet gathered any intimation of what the prospective rate on fresh fruit through the Panama Canal to the Atlantic seaboard and Europe may be. Some insist that we must get it laid down on the Atlantic seaboard for 30 cents a box, and for 50 cents to the initial European ports. Certain steamship men have informed me that such rates are too low at least until there is a much greater movement than can now be made to take the water route. Data on the steamship rates for similar distances between Australia and Europe, between America and various foreign lands, and all other possible information on the general commerce of fruit, as the same might guide Northwestern interests, is being prepared by Mr. Malboeuf for the

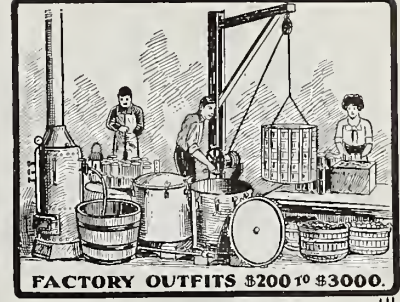
Chamber, and will very soon be issued. Recognizing that a work of the magnitude in getting the water transportation rates for Northwestern fruit is something that must be made broad and thorough, I feel that the permanent duty should repose with experts, who have given their lives to this task and who could bring the heads of the companies in touch with the growers in a great study of this great traffic problem. Portland intends to see that all the ordinary steamship routes of the world are connected here. We now have outlets to the Orient and Europe, and will soon have the European connection on a much shorter line. The Australian field may be reached directly from the Columbia now. We have just completed plans for opening after the first of the year a line to Southeastern Alaska, which will also put the local producers on equal footing with Seattle and San Francisco in reaching the Yukon basin. We must soon have direct connection with Honolulu and British Columbia, plans for both services being well advanced. It is by broadening the market and enabling the local fruit man to come to Portland on a lower rate than from any other Coast producing center to the seaboard, and then by opening the markets of the world to this product on a competitive basis with any other center, that we hope to render to you many important services.

Codling Moth

What can we do at this season of the year to control the codling moth, that insect whose damage to the apple and pear crop we must figure by the hundred thousand dollars? All fruitgrowers who have watched this insect at all know that in the fall the full-grown worm, or larvae, comes from the wormy apple, seeks a protected place under the rough bark or in the crotches of the trees, spins a cocoon about itself in which it remains inactive during the entire winter. With the coming of the warm days of spring a change begins to take place, and shortly after the blossoms have fallen and the little apples begin to form the adult moth emerges from the cocoon to begin laying its eggs about the little fruit. Each female lays on an average from forty to fifty eggs, so if only a few of these chrysalis or hibernating larvae are destroyed the number of eggs to be deposited will be greatly reduced. A large per cent of the wintering larvae can be destroyed by scraping all rough bark from the trees, especially in and about the crotches of the trees. If the scraping is done during the winter the larvae not killed in the process will be destroyed by the exposure and the birds. The sooner fruitgrowers begin to realize that this method of fighting this pest is almost as important as thorough spraying the sooner will they begin to grow a larger per cent of worm-free fruit.—Geo. M. List, Colorado Agricultural College, Fort Collins, Colorado.



Big Easy Profits From Canning Fruits and Vegetables



"The National Steam Pressure Way"

100,000 Car Loads of Fruits and Vegetables rotted on the ground in 1913. At a conservative value of \$350 each, this netted a total loss of \$35,000,000—all of which waste could have been turned into Big Profit by Canning.

Uncle Sam Says:

"Steam Pressure Cannerys are the most successful for canning all kinds of vegetables, meats, etc., because the greater heat and pressure effect complete sterilization. Steam under pressure raises the heat to about 250 degrees F. and readily destroys all bacteria and spores in fruit and vegetables."—(Extracts from Farmers' Bulletin, No. 521.)



Perfectly Adapted for Canning in
both Tin and Glass Containers

Our Guarantee

Every "NATIONAL" is guaranteed to give satisfaction or money is cheerfully refunded

SAFETY GUARANTEE All "National" Cannerys have covers securely fastened. No open boilers to endanger by scalding. Automatic vent makes dangerous pressure impossible. Write for government proof.

Profits in Canning with "National" Outfits

TOMATOES

(1,000 cans)

No. 3 cans, at \$25 per M.	\$25.00
Labels, at \$2 per M.	2.00
Solder, flux, paste 3c.	.48
Cases, at 10c each (41).	4.10
Peeling and coring, at 3c per 14-qt. pail	2.40
Processor, 1/2 day at \$2.50 per day	.50
Labeling, at 40c per M.	.40
Capping and tipping, at 10c per 100.	1.00
Tomatoes, at 25c bu. or \$7.50 ton	16.50
Fuel, etc.	2.00

Total cost\$54.38

Average selling price of No. 3 standard tomatoes is \$1.65 per case (41 cases)\$67.65

Less cost54.38

Profit per 1,000 cans.....\$13.27

STRING BEANS

(1,000 cans)

No. 2 cans, at \$18 per M.	\$18.00
Labels, at \$2 per M.	2.00
Solder, flux, paste.	.36
Cases, at 10c each.	4.10
Sorting, cutting, stringing (2 people)	2.00
Labeling	.40
Capping and tipping.	1.00
Fuel, etc.	2.00
Beans at 40c per bu. (33 bu.)	13.20

Total cost\$43.06

Selling price at 75c per dozen No. 2 cans\$63.00

Less cost43.06

Profit per 1,000 cans.....\$19.94

SWEET POTATOES

(1,000 cans)

No. 3 cans, at \$25 per M.	\$25.00
Labels, at \$2 per M.	2.00
Solder, flux, paste.	.48
Cases, at 10c each.	4.10
Skinning, at 1c per pail.	.80
Labeling, at 40c per M.	.40
Processor, at \$2.50 per day (1/2 day)	.85
Capping and tipping.	1.00
Fuel, etc.	2.00
Sweet potatoes, at 50c per bushel (40 bushels).	20.00

Total cost.....\$56.63

Selling price, at 85c per dozen or \$1.70 per case.....\$69.70

Less cost.....56.63

Profit per 1,000 cans.....\$13.07

NOTE

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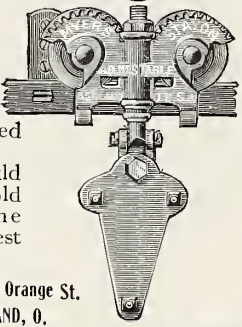
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Co-operative Fruit Organizations

By H. B. Miller, Vice President Oregon State Horticultural Society

OREGON has the reputation throughout the world for growing and preparing for market the very best apples and pears. It is beginning to have, in the world's markets, a very fair reputation for the production of a good quality of Italian prunes. Insofar as the world's market goes, I think this covers every phase of Oregon's reputation in fruit production. From what we know of its possibilities in the production of fruits, berries, vegetables, etc., its reputation is far behind its capacity of production. The problem, then, for the fruitgrowers of Oregon is in the extension of market, in fact that is the primary problem today, even in the lines of its vast products with the highest reputation. The question of the extension of market naturally carries with it diversity of production for the market. Not merely in the variety of fruits produced, but more particularly in the diversity of preparation of these products, the best form to be marketed. It is clear to anyone who has studied the recent changes in the various forms of consumption of fruits that to make the best of our opportunities, to handle our products with proper economy, the markets today demand that we should prepare them in three or more different forms. We should market the largest quantity of our finest products in the fresh state; we should market another very large proportion as canned goods; we should also prepare, in first-class condition, a large quantity of our fruits as a dried product. We can enter the field of production of fruit juices as well. The condition of the fruit industry in Oregon today demands that preparation be made in each section for putting these fruits into these various forms in first-class condition for the world's market.

Fortunately this problem is no longer a theory or an experiment in our state, for the question has been practically solved along all of these lines by the Eugene Fruitgrowers' Association. They shipped their high-class products in the fresh state; they have made a splendid reputation on their canned goods, some of which have already been shipped to European markets; they have established a satisfactory character for their dried products,

through their own method of drying and processing; they have more recently entered the field for the production of fruit juices; they are canning apples, prunes, pears and vegetables of various kinds, even pumpkins; they are making pickles and kraut, cider and vinegar; and have a most complete plant for putting fruits and vegetables into the very best forms for meeting market conditions. This is a co-operative organization, carried on by the practical fruitgrowers and farmers themselves, by which they take the product from the fields and carry it as near to the consumer as possible. By every method of economy they conserve the interests of both the producer and consumer. This splendid example of co-operative industry has been built on a substantial financial basis, starting with \$5,000 capital six years ago and developing to a \$50,000 capital today. With the present possibilities of marketing products of this character, both in the United States, Europe and Asia, on the completion of the Panama Canal there is an opportunity for the development in Oregon of a hundred such organizations as the one at Eugene. Heretofore the freight rate on canned and dried fruits from Oregon to Europe has been \$1.10 per hundred pounds, and on fresh fruits about 75 cents per box of fifty pounds. The opening of the Panama Canal will reduce this rate on fresh fruits to not more than forty cents per box of fifty pounds, and on canned and dried fruits to probably not more than about forty cents per hundred pounds. The reduction to the Eastern cities of the Atlantic seaboard, while not so great as the reduction to European cities, will be sufficient to enable this country to send to the eastern part of the United States, at a much reduced rate, many of our canned and dried fruits.

A little study of the foreign market for our products will show us something of the opportunities there. The United States exported in 1912 53,664,000 pounds of dried apples; in 1913 42,575,000 pounds. The grower received for these apples at his orchard on the average eight dollars per ton. Most of these fruits were exported to Germany and The Netherlands, where the mar-

ket seems to be continually growing. The export of prunes to foreign countries during the shipping season of 1912-13 amounted to 118,000,000 pounds, about one-half of the total product of the United States. The largest proportion of the shipments of prunes went to Germany; the next largest to France; next to Canada; next to Great Britain, and quite a large sprinkling to other countries of the world. Foreign exports of canned fruits in the season of 1912, one shipping season, amounted to \$5,600,000, largely made up of just the kinds of fruits which we produce. The exports of canned vegetables in the same season amounted to \$1,500,000. Four-fifths of these exports in fruits and vegetables were from California.

In 1900 California produced 2,775,896 cases of canned fruit and 803,617 cases of canned vegetables. In 1912 they canned 4,833,900 cases of fruit and 2,789,495 cases of vegetables. With the cost of transportation to the markets of the world reduced fifty per cent and more, and the world consumption growing, why will this wonderful increase not continue and why should not our state benefit by this development if it but makes an effort? This matter has passed the experimental stage in Oregon, and all that is required now for a great success is an extension of the industry on well established lines.

The greatest development in the market for canned fruit has been in Great Britain, but there is every prospect of an extensive development in both canned and dried fruits in the South American market as well as a broader extension in the markets of Europe. The change in the United States in the mode of life of vast numbers of population into the new apartment house type is making a much larger demand at home for the canned fruit and vegetable. The important feature in this development is in the nature of cleanliness of the product. It is of the first importance in the establishment of a reputation for Oregon's canned fruits and vegetables that they be of a very high class. We can easily surpass the world in the production of the splendid canned Bartlett pear. We can do the same along various lines of berries, such as loganberries, blackberries, raspberries, gooseberries, etc., and there is every probability that in a very short time Oregon will have as high a reputation in its canned fruits and berries as it now has in its fresh apples and pears. It is also worth while to observe that the dried fruit products of the United States have increased in ten years 575 per cent. The value rose in ten years from a little over \$4,000,000 to over \$21,000,000. This indicates something of the tremendous increase in consumption within the United States itself.

The problem confronting the Oregon fruitgrower today is, primarily, preparation for and methods of marketing. The climate, soil, general character of the country, especially in Western Oregon, together with the conditions of social development, all go to indicate

that the natural development will be in small groups, especially adapted to co-operative methods of growing and preparing for market. The rich alluvial loam along the streams, the broader areas of the valleys, together with the varied foothills, all tend to create splendid conditions for the expansion of diversity of production in berries, fruits and vegetables. These conditions also tend to the grouping of social life in a way especially fitted for diversity of production and grouping the production into preparation for the market.

While all the natural conditions are especially favorable to the development of the co-operative organization, the independent character of the farmers and producers is somewhat antagonistic, and we have to go to Europe to learn the real virtue of co-operative organizations for the benefit of producers. In the work of organizing a co-operative concern for canning, drying and marketing fruits and vegetables that grow around the valley it was discovered that the Germans and other people from Europe were most in sympathy and hearty accord with the work. One of the greatest misfortunes staring the Oregon farmer in the face today is his lack of faith in his neighbors and those people in the same line of work as himself. He must overcome this characteristic if he would put himself in harmony with the spirit of the times and reap his proper benefit from his industrial energies. He taxes himself at least ten per cent on the value of his products by his failure to get in line with the co-operative movement. The co-operative organization for handling the prune crop for Dundee the past season reports a profit of twelve per cent on its operations, and this is about the amount which the farmer generally pays for his failure to co-operate with his neighbors and others in the same lines of production.

The forming of associations throughout all of Oregon similar to the one at Eugene seems to me to be absolutely essential for the welfare of the producers and the future prosperity of the fruit industry. The time is at hand with the great expanding opportunities of the new markets for these organizations to develop. There is already established in the City of Portland a general selling agency for these co-operative canneries which seems to be handling the product very satisfactorily. Of course this united selling agency of all these organizations is an essential step in the proper marketing problem. The central selling agency, controlled and managed by representative men of these various associations, will have to see to it that there is also established a uniform character of the products. Standardization of the products is as essential as centralization in market methods. This spirit of co-operative methods amongst fruitgrowers in preparation for marketing seems to have taken hold of the people in strong earnest and there seems no doubt now that the growth along this line will be rapid and enormous.

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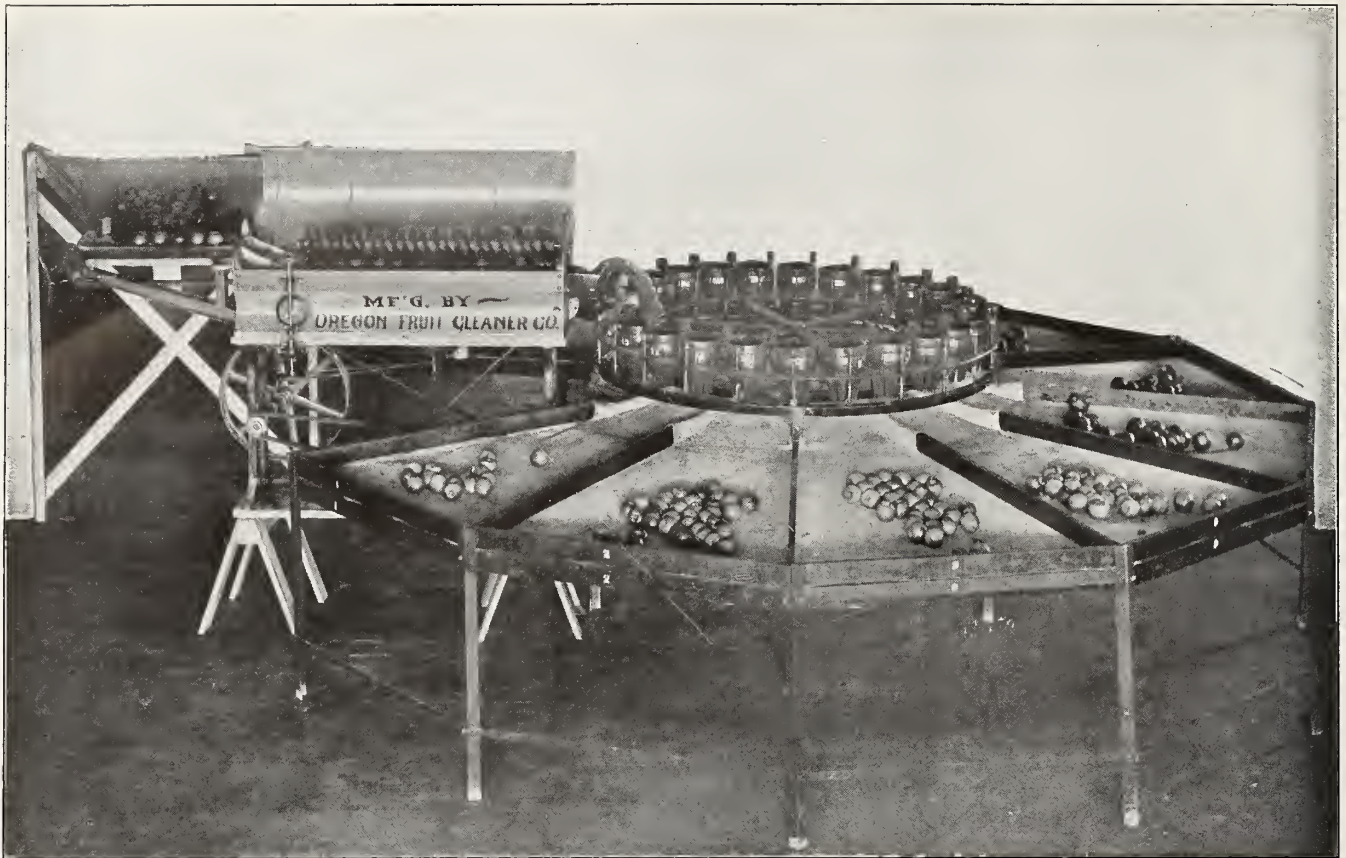
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Sub-Central Management

Read before Idaho State Horticultural Society at Payette, by M. J. Higley, General Manager Idaho-Oregon Fruit Growers' Association

THE topic assigned to me is not only new to the average grower and the fruit industry, but is also new to the management as well. Six months ago a sub-central office for the handling of the Southern Idaho and Eastern Oregon fruits was an unknown thing. Today it has become a palpable reality and has demonstrated its great usefulness in the solution of the growers' troubles. The sub-central office is in reality the clearing house for the grower between his district association and his sales office. The sub-central is his purchasing agent, buying as it does all the material the grower needs; sprays, paper, nails and boxes; distributing them through the district associations to the grower, and again assembling his fruit through the district association and manifesting it to the central or sales office; on specific orders accepted from the sales office. All the accounts for each and every grower is kept in the sub-central office, from which the funds are disbursed direct to the growers. In addition to the accounting, purchasing, etc., done for the grower an efficient inspection is maintained from the sub-central, inspectors from this office making regular inspection during the picking and packing season; and eventually their service should extend

to the inspection of the pruning, spraying, cultivating and watering of the orchards.

Briefly, the co-operative organization of the fruitgrowers is as follows: The local growers in a given district form an association known as the " * * * District Fruitgrowers' Association," the prefix being the town where organized. These district associations send two delegates to the sub-central annual meeting. In Southern Idaho and Eastern Oregon we have fourteen district associations. The delegates to the sub-central, therefore, would number twenty-eight. These delegates elect the board of directors of the sub-central, who administer the affairs of the association, elect the general manager, executive board of five, a trustee to the central and the advisory board consisting of two. The central or selling office is made up from the trustees elected from the eight sub-centrals, one from each, who constitute the governing board; they elect the president, vice-president and secretary and employ a general manager and office force to conduct the sales office. Thus the district association corresponds to the county, the sub-central to the state and the central to the federal authorities. Upon the general manager rests the responsibility of the office administration

and his labors are lightened if he is successful in selecting a competent auditor, traffic manager and able accountants.

Co-operation in the marketing of the Northwest apples has in the brief space of six months assumed proportions that are vast in their field of operation. A standard of the article to be marketed was the first essential, and the endeavor to standardize the apples from the four Northwest States was a herculean task and in itself is one of the greatest achievements ever accomplished in the apple industry. From the many districts abounding in the Northwest territory there has been shipped as many and more different methods of packing, and in many of the sections a diversity of standards and grade, that has left the dealer no other means of dealing with this product than a personal inspection of each and every shipment. Such a lack of reliable methods has done much to deteriorate the value of the fruit grown. The trade can only be educated to the real value of our product by a standard grade and pack, one that is uniform and dependable, and in no way could this be secured other than by co-operation. The elimination of the undesirable from the market that has always belittled the better product,

and has a strong tendency to reduce the price thereof, has done much to bring the Western box apple onto its higher plane. Stability can only be secured by uniformity of grade and pack and it is hopeless from any other standpoint. In no other line of business has satisfactory results been attained without uniformity and dependability being the keynote. All manufacturers have constantly sought a higher grade, and the fruitgrower is none other than a manufacturer, and it is plain that only through co-operation and the control of a large percentage of the output can the grower hope to standardize his manufactured product.

Sub-central management has had no criterion or example for guidance and the work accomplished this past six months has been by the splendid co-operation of the growers affiliated with the office. Too high tribute cannot be paid the growers in the splendid help which has been so freely given to the sub-central management. The lessons of the past years of disappointment has led the grower to a realization that relief must come from a new regime, and with the spirit of that splendid manhood which can always be depended upon in time of dire need, pure co-operation has been grasped; and the grower now clearly sees that it will lead him out of the dependence and uncertainty of the past into his rightful freedom, where he will be the master of his own affairs, manage his own business, and through the district, sub-central and central place his fruit in the hands of the trade through his own representatives, and in a standard grade and pack that will win for him a recognition that will place his business on a firm, substantial basis. His seal of guarantee as to quality will make him a standing that cannot be perverted and which he cannot be robbed of. The label of Southern Idaho and Eastern Oregon is the big blue "I-O," and the standard it has set in its brief campaign this season makes it a leader. The big blue "Y" has made a name for the Yakima growers that has brought them many recognitions of its value, and to the growers of our sub-central I would say that already your label has taken its place in the great markets. It is now fast receiving the attention it deserves and stands second to none where it has gone, and it will soon be in special demand. The protection of this label should be deep seated in the heart of every grower. His should be a special ward in his effort to protect the good will and reputation of his label.

We have but to cast our eyes over the long list of brands of merchandise in many lines that stand for quality and excellence, and by reason of their superior claims attract the best grade and command a better price than others in the same line; to realize what the big blue "I-O" means for the Idaho-Oregon growers. There can be no success for the growers of the Northwest without co-operation and it is only by co-operation that there can be had ton-

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nage enough to make a label felt in the great markets of the world, and the history of the past will bear me out. Sub-central management will therefore find great help in the loyalty of its members and the efficiency of the district managers. Ours is a new method, and as a result will admit of improvement and the placing of all the work upon a higher plane. Close touch of the sub-central with the district managers and the earnest effort of these managers to comply with requests and instructions from the sub-central will eliminate many of the unfortunate errors that are apt to creep in and bring forth their crop of discord and disappointments.

The trade is very particular at times and very exacting, and any deviation from the instructions given with their orders often causes much expense and loss. It is in the filling of all orders promptly and specifically that our co-operative selling plan is going to build for its growers an enviable name that will make for better business, greater confidence and more stable conditions. Each grower should feel that he is an integral part of this great movement and that only as the integral parts perform their parts faithfully can the perfection of the whole undertaking be brought up to the high standard that will give it the seal of public approval. I hope the growers are all broad enough to know, and I am sure they are, that conformity to the request coming from district or sub-central, promptly and pleasantly, even though they may not realize the necessity of the particular request, will all tend toward efficiency. Do not lay your circular away which asks for information on a given point until "a more convenient season," but give it immediate attention. It will take no longer to attend to it at once than to wait,

and delays are always dangerous. There is always a reason for the request and your prompt reply will add to the efficiency of your sub-central. Remember that central is entirely dependent upon the sub-centrals and the sub-centrals dependent upon the district associations, and the growers' weakness in any of the basic parts weaken the superstructure. The task of organizing the many parts of the sub-central has been enormous and the grower can afford to be charitable in his judgment of the work in view of the necessity of perfecting the methods and of installing a system while the season of actual operations was fully upon us. The lateness of our start has made a great difference in the efficiency of the work, but when all this has been fully considered and results measured up the verdict will be favorable.

The financing of the sub-central has been a matter which has taken great care and the educating of the banker to a comprehension of the real value of the association's collateral. The grower by himself could not obtain a loan upon his fruit, as the banker does not recognize fruit thus segregated as possessing any collateral value; but collectively, under association control and marketing, this same fruit passes as the best of collateral. The banker does not hesitate to loan liberally to the association, knowing as he does that the moral security is of the very highest. The sub-central, standing as endorser for the growers collectively, guards well the banker's interest and always meets the notes promptly. Thus has been established a mighty credit which in itself is one of the most remarkable achievements of the sub-central in its very brief history. Mr. Banker loses no sleep over the credits he has extended to the sub-central, well knowing



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that instead of having a very limited security covering a few cars, some of which may go wrong, he has behind his loans the combined tonnage of the sub-central.

Not every effort in the line of co-operation will bear the inspection that sets the standard of simon pure co-operation. Many so-called movements are masking under this cover which are anything but co-operative. The failure of such movements has bred distrust in the minds of growers, and unless they apply their reason and analyze the movement the deaf ear may be turned toward the genuine article simply from a prejudicial standpoint. This failure of the grower to realize the principles involved and to grasp the real intent of his organization places him in an unfavorable light; and from his standpoint he is closing his eyes to the real benefit that the association is marking out for him. Too often the measure of success is gauged by the price realized in the united effort of his association when the entire machinery is new, and before the many problems of distribution have been met and mastered he fails to grasp the larger view based upon a comprehension of the principles involved. That splendid spirit of co-operation expressed by some growers who are willing to sacrifice their entire crop for the first year if the result would be the establishing of a marketing machine of their own is most commendable; and with such growers the work

of the sub-central management is a genuine pleasure.

Co-operation means the surrender on the part of the grower of his own personal desires and his adjusting himself to the rule of the majority. Against such a procedure the grower's confidence in his ability to handle his crop is a barrier. His own independence argues against it, but after all is said and done he is gradually coming to the recognition that only by co-operation can he hope to succeed. Co-operation means the rule of the majority and the necessity of the grower abiding by the results. Not only is this true, but the power necessary to carry on the affairs of an association must be vested in the governing board so the business of the association may be conducted along strict business lines, as in other corporations. Thorough business ethics of the sub-central is one of the first and most important points. Through this one essential is builded an enduring confidence which is the strongest asset the association has and one which the grower is proud of. Co-operation means the proper distribution of our products so as to avoid their clashing in competition and the payment of needless freight by cross shipments;

the securing of transportation rates and the equalization of these benefits, also the maintenance of prices. These last points are the work of the central and are not a part of the sub-central's work.

The sub-central must have jurisdiction over the grade and pack, the assembling and manifesting of the fruit; and in time to come must work out a comprehensive orchard survey covering every detail of the grower's orchard, and through competent inspection must be in a position to render expert advice to the orchardist covering the many problems they have to meet. The cultivation, pruning, spraying and picking of the fruit should in time be done by the association when the owner is neglecting any of these details. The Southern California Citrus Growers' Association is a splendid example of the high efficiency that may be attained through intelligently handling each of these many details. In fact the magnitude of this great movement, from the standpoint of the sub-central, looms in colossal proportions from the small beginning that has been made in the brief existence of this movement.

Fruit Exhibits at the Panama-Pacific Exposition

[Information furnished by Panama-Pacific Exposition Publicity Department]

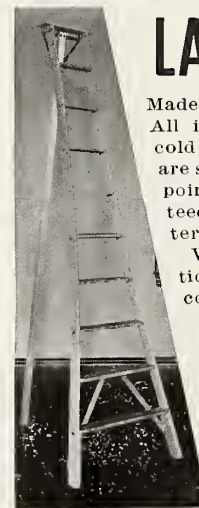
THE fruit industry, with the many important scientific methods which it has adopted during recent years, will be one of the most interesting and educational features of the vast exhibits at the Panama-Pacific International Exposition to be held in San Francisco in 1915 to celebrate the completion of the Panama Canal. Considerable space in the magnificent Palaces of Horticulture and Agriculture will be devoted to the displays of the fruit industry. These will include every kind of fruit tree and plant growing small fruit from every part of the world, their products, as well as the various methods of raising, propagating, packing and shipping. The latest scientific methods of forced culture will be shown and considerable attention will be given to the principles of frost fighting. Insect pests, the dread of all fruitgrowers, will be shown with the most modern appliances for their eradication.

The extensive displays of the fruit industry will be viewed by fruitgrowers from every part of the world who are expected to come to San Francisco during the exposition. The California Fruitgrowers' Association already has accepted a formal invitation to hold its 1915 convention in San Francisco between February 20 and December 4, the opening and closing days of the exposition. Similar invitations have been extended to the British Columbia Fruitgrowers' Association and the Eastern Fruitgrowers' Association, and while neither of these organizations has taken definite action it is hoped that they will accept. Other associations of the fruit-growing districts also are expected to convene in San Fran-

cisco in 1915. This will make San Francisco the mecca of fruitgrowers during the progress of the universal exposition. Assembling here, they will find among the exposition exhibits vast displays of fruits from every nation where the industry thrives, affording an unprecedented opportunity for an interchange of ideas and methods.

The Palace of Horticulture, in which most of the exhibits of the fruit industry will be housed, will be one of the most magnificent of the exhibit palaces. It occupies the west end of the South Gardens, balancing Festival Hall on the east end. The blooming flower gardens to surround this palace will give it appropriate and bright environs.

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In architectural composition this palace is Saracenic. In relation to the arrangement of its domes and minarets it resembles the Mosque of Sultan Ahmed I. Wooden trellis work, after the garden architecture of the Louis XIV. period in France, will be a distinctive feature of the decorative scheme and there will be large areas of glass, suggestive of the purpose of the structure.

The Palace of Agriculture, which will contain a botanical collection of fruits and an array of by-products, stands on the north side of the main group of palaces, between the Palaces of Food Products and Transportation. When completed, this palace will cost \$425,610 and will have a floor area of 328,633 square feet. Fruit-growing exhibits in the Palace of Horticulture will illustrate the practical as well as the theoretical phases of the industry. There will be a collection of fruit trees and vines and the various methods of propagating, packing, shipping, planting, growing and pruning will be shown. Plants of small fruits, such as the various kinds of berries, will be displayed. The methods of cross-fertilization of fruits and nuts will be explained and illustrated.

One of the most interesting and educational features of these fruit displays will be an array of exhibits of insect pests and diseases of fruit trees. Science has made a deep study of fruit-tree parasites during the past decade and the latest methods for their eradication are to be illustrated for the benefit of all fruitgrowers. Under a separate group of exhibits devoted to fruits there will be shown every variety from pomaceous and stone fruits to the smallest berries. Tropical and semi-tropical fruits will be included in the display as will the citrus fruits. Considerable space will be devoted to an exhibit of fruits matured in frost dis-

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tricts under frost-protecting appliances, while the principles, methods and devices used in frost fighting will be shown in another part of the fruit-culture display. Preserved, dried and pickled fruits of every kind also will be shown, together with the processes employed. Equipment for canning fruit will be displayed and the various processes will be illustrated. Jellies and jams will form an interesting part of this group. Manufacturers of horticultural implements will find interest in an extensive display of tools and apparatus in common use. This will include pruning and grafting knives, ladders, tree diggers, watering apparatus and spraying appliances.

The theoretical side of horticulture will not be overlooked in the Palace of Horticulture. An entire group of exhibits will be set aside for this phase of the subject, which should prove of high educational value to fruitgrowers of every country. There will be shown charts and diagrams indicating the comparative area occupied by fruit industries in the various states and nations as well as maps portraying the progress of organization among fruitgrowers. Other charts will show the moisture requirements of different fruits, ripening periods, time of market suitability and other details of universal interest. In the magnificent Palace of Agriculture suitable space will be devoted to a display of confections made of fruit, such as glace fruits. Cider and other unfermented fruit juices will be included in a special class of exhibits, and there will be a botanical collection of all fruits.

The Panama-Pacific International Exposition will be ready in every detail when the gates swing open February 20, 1915. The progress of its building already exceeds even the most optimistic dreams of the exposition officials and assures the materialization of the

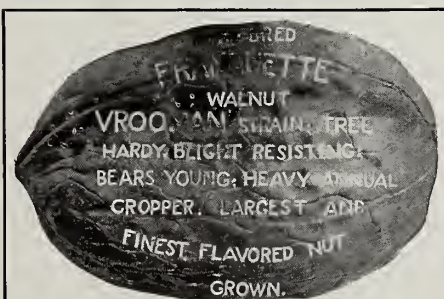
early promise that all of the eleven exhibit palaces will be finished and ready to receive exhibits by July 1, 1914, eight months before the exposition opens.

Grafting

The question is often asked, How late can you graft over trees? This question probably can be answered easily in this way. You can certainly graft apple and pear trees up to the time their leaves are as big as squirrels' ears, and I have heard of cases where grafting has been done after the leaves were of full size. However, there is one thing that must be remembered, and that is, to do successful grafting the scions should be absolutely dormant. The buds should not have broken. After the scions have started to grow it is very hard to make successful unions. Where a large amount of grafting is to be done it is better practice to cut the scions in the middle of the winter. Then stratify them in sand, putting in a layer of sand, then a layer of scions, and so on. Keep the sand moist, but not wet, nor too dry. If it is kept too wet the buds will drop out and mold, and if it is too dry they will shrivel up. With cold storage facilities it is very easy to keep scions and buds for grafting in storage for a long time. In the case of June budding, we can keep the scions on ice until June, so as to hold the buds dormant.

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of Congress of March 3, 1879.

The Panama-Pacific International Exposition.—The Panama Canal will be opened in a few months. The celebration of the opening will be held in San Francisco in the year 1915. The Panama-Pacific International Exposition in celebration of the Canal will be the greatest exposition which has ever been held in the world, and probably none as great will ever be held in the future. The Panama Canal opens up to the fruit industry of the Pacific Coast an immense territory which will be reached by ocean freight at probably less than one-half of the present cost. It costs about 60 cents at the present time to ship one box of apples by rail to Atlantic points; through the Panama Canal it will be about 20 or 25 cents per box, at least so estimates state at the present time. Freights to European points will probably be reduced to 40 or 50 cents per box. However, there are many Middle West cities to be supplied by railroad. The present output of the Northwest taxes the refrigerator service of all transcontinental lines to the full capacity. There is not much encouragement at the present time to lead us to believe that the railroads will increase the number of refrigeration cars. The quantity of apples to be consumed by the Middle West cities this side of the Atlantic, which can be reached cheaper by rail than they can by ocean freight to Atlantic points and back by rail to interior cities, will utilize all the refrigeration cars in existence at the present time, which number we understand is about 30,000. The increased quantity of apples that will be produced in the Northwest, therefore, will have to go to Atlantic points and European points through the Panama Canal, consequently it seems timely

and fitting in this edition to present the fruit growers, shipping associations and others interested with valuable information in reference to the opportunities that exist.

Hon. H. B. Miller, formerly Consul at Tientsin and later Consul at Belfast, now vice president of the Oregon Horticultural Society, for many years a fruit grower at Grants Pass and now owning a large acreage at Sheridan, prepared a large number of questions which were sent to the Secretary of State and by him sent to all of the United States Consuls at foreign ports. The replies were published in a bulletin issued by the government. Mr. Miller has taken these reports, which were very complete, and re-edited them in a practical way, giving all of the information in the briefest space possible. The information contained in these reports is of inestimable value to the fruit growers of the Northwest. This information has been compiled carefully and painstakingly by Mr. Miller, who was assisted by Mr. Stewart F. Lamb. Up to the present time very little information has been furnished fruit growers of the Northwest in reference to export opportunities. In fact, no information of this kind has been available. The report appearing in "Better Fruit" on foreign markets, referred to in this edition, is the most valuable information in reference to foreign markets that has ever been furnished the fruit growers of the Northwest and should be carefully read by every fruit grower on the Pacific Coast.

Transportation League.—The Chamber of Commerce and Commercial Club of Portland, Oregon, appropriated a fund sufficient to form a Transportation League, which has now been in existence for two months, in charge of Mr. C. A. Malboeuf, formerly connected with the Southern Pacific Railway. A wonderful amount of information valuable to the fruit grower has already been collected by Mr. Malboeuf. There is probably no man in the Northwest who is better posted on transportation rates and matters pertaining thereto, because he has been a success in his railway business and has devoted nearly all of his life to transportation matters. Fruit growers are very fortunate in securing Mr. Malboeuf to carry on this work. It is understood it is the intention to make this league a permanent one and it is to be hoped that as soon as possible fruit growers of the Northwest will make arrangements to finance the league and continue the good work. This could be easily done by having each one of the associations contribute a very small sum per carload, which would only cost the grower a very small fraction of a cent per box.

Sub-Central Management.—With the big organizations engaged in marketing fruit, that is, attending to the selling end of the business, the local association manager becomes separated from this part of the work, which enables

him to devote his entire time to and become an expert in the management of the local association. This is a step in the right direction. The sales manager should be left free to devote his time entirely to the selling end of the business. The executive manager of the local association, in order to conduct the work scientifically and economically, should be divorced from the selling end of the business. Many articles have appeared in "Better Fruit" in reference to the association manager, marketing, etc., but none have appeared dealing with the executive management, separating it from the selling end of the business, until this edition. It is therefore with pleasure that we call the attention of our readers to some very valuable information contained in an article on "Sub-Central Management," by Mr. H. J. Higley, which appears elsewhere in this number.

On the cover page of this edition appears an illustration of the beautiful building, the Palace of Education, at the Panama-Pacific Exposition. There are hundreds of beautiful buildings just as handsome as this; one which will be of particular interest to the fruit grower is the Palace of Agriculture and Horticulture. This will probably contain the largest exhibit of fruit that has ever been made anywhere in the world, showing more kinds and varieties of fruits than has ever been exhibited previously at any one time. This exhibit will be extremely interesting, instructive and educational, and no fruit grower can afford to miss it. Every fruit grower on the Pacific Coast ought to attend, because many opportunities will exist for the fruit grower to acquire information about export opportunities, ocean freights, steamer rates, etc. Every country on the globe will have an exhibit of products and manufactured goods.

Plant Diseases.—It is astonishing to find how limited is the knowledge of every fruit grower on different plant diseases with which he has to deal and contend. Very few fruit growers recognize or know many of the common diseases that exist. Usually bulletins are so scientific that the fruit grower either does not comprehend them or they are so lengthy that he is not inclined to read them. Every fruit grower should be posted on the different diseases, he should be able to recognize them, and with this object in view Professor J. S. Hall has prepared a very excellent, practical, clear and concise article entitled "How to Recognize Some Common Plant Diseases." This article appears elsewhere in this edition and is one which should be read by every fruit grower.

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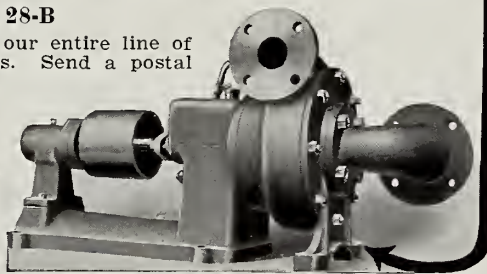
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Relation of the Peach Industry to the Cannery

By Professor C. I. Lewis, Oregon State Agricultural College, Corvallis

THE peach seems to be the most staple of all the fruits that we are now growing in the Pacific Northwest; and, strange to say, this condition is not due to a difficulty of production, for there are indeed few regions of the entire country that can produce more regularly and successfully crops of peaches than the Pacific Northwest. There are famous peach regions in the United States that are very content when they can produce three crops in five years; yet we have peach orchards here on the Pacific Coast that have only failed two crops in thirty years, and yet the peach business as a whole has not proved to be very profitable.

The query at once arises: How is it that, in a country where we can produce peaches so cheaply and so plentifully, it is impossible to make money? The trouble, as I see it, is due chiefly to the fact that the peaches which we produce are grown chiefly for shipping purposes rather than for by-product purposes. The shipping distances from the Pacific Coast to the Middle West and East are rather far for the peach. Although it can be sent successfully, nevertheless the freight rate is rather prohibitive. Now, unless one is studying the peach question of the entire United States very carefully he is very

likely to load his peaches on the wrong market. Again, forest fires have been a factor which have kept us from shipping peaches. Our local canneries have been very small and have been unable to handle the fruit. Unfortunately most varieties that we grow are unsuited either for canning or drying. The favorite peach of the canneries is clingstone; and, while some white peaches are used, the great favorites are the yellow clingstones that are free from all redness around the pit. These peaches are far superior to freestones for canning purposes. They have a texture and canning quality that is not found in most freestones. The yellow flesh at present is very popular and the absence of red in the flesh around the pit will mean that the juice can be kept clear. For evaporating purposes, on the other hand, the yellow freestones are preferred, and if the peach has plenty of red around the pit it is all the more a favorite, as this red color in the dried product tends to make it very attractive. There are some freestones that are used for canning purposes. In fact many of our common varieties are put up to a more or less degree. But the general trend of the trade is away from such varieties. Probably two of the best freestones

that we grow are the Muir and the Lovell. The clings that are becoming very popular on the Pacific Coast for canning are such peaches as the Tuskena, often known as the Tuscan Cling; Heath's Cling, Phillips' Cling and McKeivitt's Cling. The McKeivitt's and Heath's are white clings, whereas the Tuskena and Phillips' are yellow clingstones. Other clings are used, such as the Orange Cling, the Lemon Cling, McDewitt's, Henrietta, etc.

In choosing a peach for canning purposes in the Pacific Northwest we must bear several facts in mind. First, if we can get the desirable peach it will be a great boon to our fruitgrowers. It would give them an additional fruit, which would perhaps allow them to run at full blast a longer season; and the longer a cannery can run the less per day is charged for overhead expenses. This peach, however, to fill our demand, must not compete with the Bartlett pear. The Bartlett pear has come to stay and is proving to be perhaps the most desirable fruit that our canneries can secure. Its season is fairly long; it can be grown in large quantities and grown cheaply; furthermore, it is in tremendous demand and the competition is not very great, so that the canneries are going to plan to handle all the Bartlett pears that they can handle during its season. Consequently they do not wish to be troubled with peaches when the pears are ripe. But, if we could secure a good cling peach that has the good characteristics which the canneries desire and at the same time get one which will come either before or after the Bartlett pear season, we should have the peach that we are looking for.

The Tuskena, or Tuscan Cling, in parts of California comes at about the same time as Crawford's Early. Heath's Cling, on the other hand, is a late peach, ripening at about the same time as the Salway. The Salway, by the way, is a great favorite as a home canner and is thought by many a housewife to be the best peach that she can secure. Fortunately a large number of our peach growers have planted a sufficient number of these cling varieties, so that in a very short time we shall be able to find out how well they adapt themselves to our climate and soil, and whether or not their ripening period is desirable. I am satisfied that if we can get the desired canning and evaporating peaches, from that time on the peach industry will grow in importance until it will become one of our leading industries.

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How to Recognize Some Common Plant Diseases

By John J. Hall, Washington State College, Pullman

DISEASES in plants may be defined as any variation due to the derangement of the most favorable conditions for the life of the plant. The most favorable conditions are seldom, perhaps never, realized; therefore such a definition will not be entirely satisfactory. When the conditions are so seriously changed as to threaten the life of any part of the plant or the plant as a whole we generally say that the part of the plant or plant as a whole is diseased. In studying plant diseases there are three things to be considered: (1) The immediate cause of the disease; (2) the effect of the disease upon the anatomy, form or function of the host; (3) the predisposition of the plant to disease.

Plant diseases are of two kinds, organic and inorganic. The organic diseases are those that are caused by living organisms, such as bacteria, slimes, moulds and fungi. Inorganic diseases are those that are caused by agencies other than living organisms, such as unfavorable conditions of the soil or weather. The inorganic diseases sometimes travel under the name of “Physiological” diseases. Thirty years ago there were less than half a dozen scientific men working upon plant diseases in the United States, while today there are at a conservative estimate more than two hundred such

men engaged in this line of work. The number of organic diseases minutely investigated has increased from a score or so to more than five hundred, and of the five hundred more than half are known to be serious and to cause more or less loss to the producers of the world. Diseases attack all parts of the plant. Upon the leaves they cause spottings, mildew and a distortion which is sometimes called curl. Upon the stem or branches they cause roughened places that are known as cankers. Upon the roots they cause rotting of the roots called root rot and a stoppage of the water-conducting tissue, thus bringing about some of those diseases called “wilts.” Upon the fruit they cause “fruit rots,” “fruit spots,” “fruit blotches,” or in some cases diseases that are known as “fly-speck.” Some of the names that are commonly given to plant diseases are “rot,” “blight,” “wilt,” “spot,” “scab,” “mildew,” “smut,” “rust,” with all of which you are more or less familiar.

The loss from plant diseases is so great throughout the United States that, to bring it a little closer home, I will quote the loss from seven diseases annually: Wheat rust, \$67,000,000; wheat smut, \$3,000,000; wheat stinking smut, \$11,000,000; oat smut, \$7,000,000; potato blight, \$36,000,000; peach leaf curl, \$3,000,000; apple bitter rot, \$50,000,000,

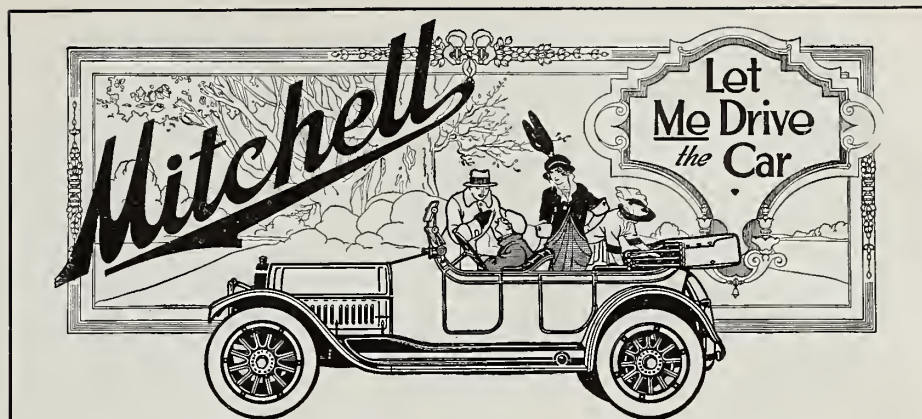
a total of \$177,000,000. I have here taken the best known diseases, but that does not necessarily mean the ones that cause the greatest amount of damage, so you can get some idea of the extreme loss occasioned by disease.

Plant diseases, aside from the division according to cause, may be called general and specific or those that attack a number of different plants and those that attack only one plant. In taking up the special diseases it is my intention to consider first some of the fruit diseases and then later some of the vegetable diseases, for I believe that a more thorough knowledge of all diseases is an essential to proper crop production. Of the fruit diseases I will begin with the apple “bitter rot.” This disease does not as yet occur in this state, but it might be well to be able to recognize it in case it does make its appearance. The damage done by the disease is to the fruit, at least primarily, although cankers are formed upon the branches. Upon the fruit the disease starts as a small, nearly circular, rotten spot. This spot gradually increases in size and after a time shows concentric circles of pinkish pustules in the decayed area. The decayed areas finally embrace the whole of the fruit, which then begins to shrivel and wrinkle. This shriveling continues until the fruit becomes what is known as “mummy.”

These "mummies" may remain upon the tree all winter and become a source of infection in the spring. The chief source of infection is not these "mummied" fruits but the cankers. The cankers are roughened places upon the branches and in them the disease lives all winter and develops a so-called winter stage which causes the greater amount of infection in the spring.

Another disease of the apple that may be found in the state in the future is the "blotch." Here all the aerial parts of the tree are attacked. Upon the leaves it causes small orange spots about the size of a pinhead in which can be seen one or more minute black dots. These dots are the fruiting stage of the disease. Upon the twigs the disease causes reddish-brown spots. These spots are usually marked off from the healthy tissue by a distinct line which often becomes a very marked crack. Within the spots are found small black dots which are the fruiting stage of the disease. The spots are more frequently found near the base of the leaves and are much more universal upon the watersprouts than upon the outer part of the tree, although these parts are by no means free from the trouble. Upon the fruit there appear "blotches" that look as if a drop of dirty water had splashed upon it. These "blotches" may be few or many and in some cases so affect the fruit that it develops irregularly. Occasionally the disease becomes so bad that it causes the fruit to crack, due to the inhibiting effect of the disease upon the growth of the fruit at the point of attack.

The next disease is one that occurs in the state and does a large amount of damage to the apple and the pear industries. The common name of the disease is the "scab." It attacks the leaves, twigs, flowers and fruit. Upon the leaves it causes blackish-green spots with more or less irregularly circular outline. Sometimes these spots coalesce and cover the whole surface of the leaf. Upon the fruit the disease first appears as minute gray spots like dry blisters. This is due to the lifting of the epidermis of the apple by the disease. The spots increase in size and the skin breaks open, leaving portions of it attached to the edge of the spot, forming an irregular grayish scaly border to the spot. The spot itself at this stage is seen to be composed of a velvety blackish substance which later sloughs off and leaves a russeted spot. If several of these spots occur upon the same side of the fruit they cause a cessation of growth of the fruit upon that side. The spots may unite and cause the whole side of the fruit to become affected. In such cases the fruit is very likely to crack open and thus make entrance way for other rot-causing fungi. The twigs are studded with light-brown spots. These spots are oval and as a rule scattered, but sometimes they coalesce and form considerable areas which appear as a scurfy coating upon the twigs.



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The next disease is the so-called "rough bark" of the Newtown. It appears as brown spots upon the leaves. In the spots are small black dots. Upon the fruit it may cause a rotting, but such occurrence is rare in natural conditions. The chief damage is to the twigs, where the disease is first visible, as certain sunken areas in the bark. These sunken areas enlarge, turn black and finally crack or break open about their margins. Upon examina-

tion of such spots the tissue underneath is found to be dead and blackened. The whole of the branch is likely to become affected, at least the disease girdles the branch, occasionally killing them.

Another disease is the spotting of the leaves, which I mention in passing, and say that it is caused by the same organism that causes the "black rot" of the apple, but may be due to other disease organisms, or even in some



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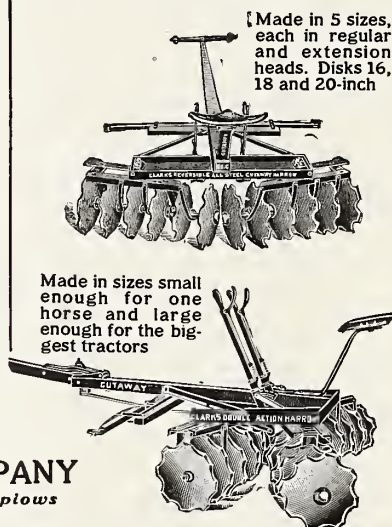
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cases to spray injury. The last apple disease that I want to take up is "black spot canker," or I believe better, "anthracnose." This is a disease peculiar to that part of the state west of the Cascade Mountains. It affects both the fruit and the branches of the trees. The disease causes cankers upon the branches which, when they are first visible to the naked eye, are circular, somewhat sunken and dark colored. The cankers increase slowly in diameter and become oblong in outline and nearly black in color. As the canker becomes mature the bark becomes dry and brittle and the dead diseased tissue is separated from the healthy by a marked fissure. In these cankered spots there appear small pustules at the center. These spread until practically the whole canker is affected. After these pustules have matured their spores the bark in which they occur

may drop out, leaving a scar. Upon the fruit the disease has an appearance very similar to that caused by the "bitter rot," but does not cause as much damage as does that disease.

Peach leaf curl causes the leaves, or at least a part of the leaves, to become distorted and very much out of shape. It often causes the branches that bear the distorted leaves to enlarge, and as both leaves and branches age the surfaces are covered with a white more or less flour-like coating. Sometimes the disease will cause the complete defoliation of a tree and a second crop of leaves will then form and thus weaken the tree. One other characteristic of the disease is the formation of a sort of "rosette" at the tips of affected branches.

"Brown rot" of stone fruits occurs in Washington upon prune and cherry, and may be expected upon the peach.

At first a small circular brown rotten spot occurs upon the fruit. This gradually enlarges until it involves the whole of the fruit. At this time the surface of the fruit may be covered with a grayish-brown powdery substance, more or less in pustules. These pustules are the summer spores and spore-breaking stalks of the organism that causes the disease. The fruit then begins to wrinkle and shrink, and at length becomes a "mummy." This "mummy" may hang upon the tree throughout the winter or fall to the ground. Besides the fruit the disease attacks the flowers, kills them and causes them to fall. The injury done by this disease to the flowers is often confounded with frost injury. Through the diseased flowers the trouble may spread to the twigs in case the latter are injured.

"Crown gall" is a swelling or tumor-like growth at the crown of the tree or upon its roots. It attacks both apple and peach as well as many other kinds of plants. This disease causes the tree to come into bearing earlier and shortens its producing life and may sometimes kill a tree. It causes the tree leaves to be lighter in color than those of a healthy tree.

Blackberry "anthracnose" appears upon the aerial parts of the plant. Upon the cane it causes at first reddish spots, oval in shape. These spots later have their centers grayish white, due to the presence of great numbers of spores in them. The disease appears upon the veins of the leaves of the blackberry and upon the blade of the leaf of the loganberry and produces spots similar to those found upon the canes. The most serious damage is done to the fruit of the blackberry where the drupelets are attacked. These drupelets fail to grow, then dry up if the infection is early in the season, giving rise to what are called "blighted" berries. If the infection is late in the season the disease causes a small spot upon the drupelet attacked and thus destroys the market value of the fruit.

There are two leaf spots of the currant that are possibly found in this state, either of which cause more or less defoliation of the plants. In the first of these the spots are brown or gray and often reach a diameter of an eighth of an inch. Upon the leaf the

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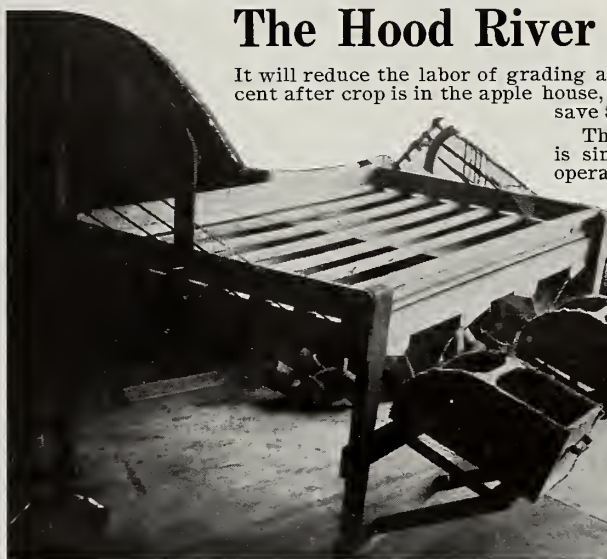
other disease causes a great number of small spots that are at first brown, but soon cause the leaf to turn yellow and fall.

There is a disease of the strawberry that will cause some damage in the state, as it has already made its appearance in some districts. This is the leaf spot or leaf blight, and is easily recognized by the spots having reddish borders around a center that is whitish.

Of the diseases that do not attack fruit but do attack vegetables I want to mention just a few. The first of these is the "anthracnose" of the bean. This attacks the pod of the bean and makes grayish spots that have a reddish border. As the diseased spots age there appear in them pinkish pustules of spores that are responsible for the spread of the disease. The disease attacks the stems and leaves as well as the pods. The wax varieties are more susceptible than the green-pod varieties. The "black rot" of cabbage is a disease that is very destructive in some parts of the country and if once introduced into this region may become so here. It is found in the leaves and the stem, where it causes the veins to become blackened. Where the disease affects the leaves they soon turn yellow and wilt, then dry and become parchment-like and fall. In cucumber "mildew" the leaves are attacked. The disease may be recognized by the yellowish angular spots upon the upper side of the leaf. If the under side of these spots is examined they will be found to be covered with a whitish down. Potato "late blight" causes spots to appear upon the leaves, usually at the margin. The diseased parts soon die and turn black. In the earlier stages of the disease the blackened part is surrounded by a narrow border of light-green color. Under suitable conditions the more recently invaded areas are covered with a fine white down. The blight attacks the tuber as well as the leaves and there causes somewhat sunken areas with a darker color than the healthy parts upon the surface, while the flesh is of the normal white color. Potato "scab" is recognized by the rough pitting of the tubers. This first appears as a very small reddish or brownish surface spot, but soon enlarges and deepens and forms the regular roughened pitted area. "Dry rot" of the potato usually causes the stem end of the tuber to rot with a dry leathery decay, and may eventually include the whole of the tuber. Sometimes before the tuber begins to rot the vascular bundles are blackened and may be easily seen if the tuber is cut across the stem end. "Rhizoctonia," or "rosette" or "little potato," is a disease that lives in the soil and attacks both the stem and the tuber. Upon the stem it may cause cankers above, which is a coating of white mycelium around the stem. Upon the tuber it may cause a dark-reddish purple color which, although it does not go very deep, destroys the salability of the potato.

The Hood River Apple Sizer

Apple buyers and consumers are demanding standardization and uniformity in the grading and sizing of apples. This work is usually done by hand, costing from five to fifteen cents per box. The apple industry demands economy in every phase of the business. Consequently an apple grower in Hood River has invented



The Hood River Apple Sizer

It will reduce the labor of grading and sizing from 20 to 30 per cent after crop is in the apple house, making the little machine save \$2.50 to \$5.00 per day.

The Hood River Apple Sizer is simple in construction and operation—with no complicated machinery to get out of order. It is small and compact, occupying a space of 4½x6 feet so it can be used in any pack-

ing house, no matter how small. With extra help it has a capacity of 500 boxes per day and the cost of grading and sizing can be done for 3c per box. The price is so low that every grower, no

matter how small, cannot afford to be without it. ANY GROWER WITH A 1,000 BOX CROP CAN SAVE THE COST OF THE MACHINE IN ONE YEAR.

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Listing everything necessary for the successful handling of bees and production of honey. Gives Valuable Information on Pollination. Tells How to Keep and Care for Bees.

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PORTLAND SEED COMPANY
PORTLAND, OREGON



Red Spiders and Mites

The red spider is not an insect, but a mite. It sometimes is reddish in color, hence the name, but it is often brownish or greenish yellow. There are red spider of the orchard, of hops, of raspberries and strawberries, of greenhouse plants, etc., as well as of grass and shade trees, like locust and cottonwood. The true red spider passes the winter in the ground in a partly grown condition. Other red spiders, like the clover mite or orchard mite, lay thick shelled but microscopic winter eggs on the bark of the plants they infest. Often the eggs are so numerous on certain twigs of orchard trees as to give a red color to the bark. Such eggs are generally resistant to spray. Sulphur-lime has but little effect on them, but the Blackleaf spray destroys many.

All mites are susceptible to sulphur. Plain cold water also has a detrimental effect on their growth. Summer sprays containing sulphur, such as weak sulphur-lime (one part of concentrate with thirty parts of water) or sulphured kerosene emulsion work well in checking either the brown mites or red spiders. In making the kerosene emulsion add one pound of sulphur to each gallon of kerosene used. A common formula is to add sulphur to soap solution (15 pounds sulphur and 2 pounds whale-oil soap to a barrel of water). Instead of soap as a sticker flour paste is sometimes used. Sulphur may be mixed with the paste and added to weak sulphur-lime. Simply dusting sulphur into the trees is effective in summer time.

Blackleaf tobacco extract is very dependable. It may be used one part to seventy-five, or the stronger Blackleaf 40 may be mixed one to eight hundred of water. It would be well to add this to the whale-oil soap and sulphur spray. A simple treatment that often proves entirely effective is to turn a garden hose on the infested plants. Where this is impossible a stream from the spray pump may be employed. For the red spiders of the greenhouse, sulphur is commonly placed on the heating pipes. The fumes given off prevent the development of the mites.—Washington State Agricultural College Experiment Station Bulletin.

Top-Working and Grafting

Considerable top-working and grafting has been done this spring. It is very easy, however, to make a mistake in the care of the grafts. The common method is to allow the grafts to grow unhindered for the entire year, pruning them the following spring. This is undoubtedly a mistake. The grafts, being on vigorous trees, make very strong growth very similar in nature to water sprouts. The growth shoots straight into the air, and breaks off if unusually strong winds are experienced or if heavy birds alight upon it. Instead of allowing these grafts to make so much terminal growth, it would be much more desirable to pinch them back or prune them back so as to force



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CALIFORNIA



out lateral growth, encourage a spreading growth; in other words, train the grafts just as though you were pruning young trees. By pruning them one or more times during the summer you will have a much more satisfactory tree than if you were to let them grow vigorously the entire year.

Grafting Wax Formulas

The following formulas for grafting wax are being used at the Oregon Agricultural Experiment Station:

Common Grafting Wax.—(Formula 1) Four pounds resin, two pounds beeswax, one pound tallow. (Formula 2) Four pounds resin, one pound beeswax, one pound tallow.

Walnut Grafting Wax.—Resin, five pounds; beeswax, one pound; finely pulverized charcoal, one-half pound; raw linseed oil, one gill. After melting the beeswax and resin over a fire that is not too hot, add the charcoal, stirring steadily, then add the oil. After moulding the bricks it should be placed in greased pans. As one needs to use the wax it may be broken off in lumps and melted in suitable dishes. It should be in liquid form when applied.

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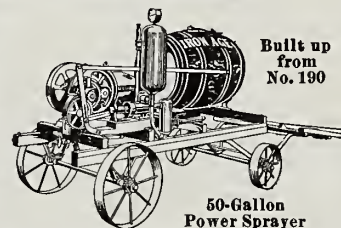
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Hood River Orchard Census

Hood River County Assessor Mr. J. Wickham has just completed a statement showing the actual number of trees of different ages in Hood River, which is as follows:

1 year old, set in 1912.....	1,795
2 years old, set in 1911.....	1,611
3 years old, set in 1910.....	2,294
4 years old, set in 1909.....	1,471
5 years old, set in 1908.....	1,461
6 years old, set in 1907.....	1,185
7 years old, set in 1906.....	779
8 years old and over.....	2,656

It shows that about 20 per cent of the acreage is in bearing, which shipped 1,000 cars in 1912 and 1,000 cars in 1913.

A Good Poultry Ration and Its Cost

A perfect ration for laying hens contains required food elements in approximately the right proportion and in the forms most economical in the

locality where the feeding is done. Professor James Dryden, head of the Poultry Department Oregon Agricultural College, has prepared a list of five more or less exact rations for one laying hen for one year. The following is ration No. 4, considered to be one of the best for most places in Oregon:

Material	Quantity	Cost
Wheat	30 lbs.	.45
Oats	10 "	.15
Bran	10 "	.12½
Corn	5 "	.10
Beef scrap	5 "	.20
Corn meal	5 "	.10
Linseed meal	5 "	.12½
Middlings	5 "	.07½
Shell	3 "	.03
Grit	3 "	.03
Charcoal	2 "	.05
Green food.....	..	.05

Total.....\$1.48½

While the cost of the above ration will vary in different seasons and at different places it is thought to be very close to the average cost. Most of the

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Catalog—Fruit Growers' Supply Depot—1914

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material, such as wheat, oats and corn, can be produced more cheaply on the farm and marketed more economically when converted into poultry products. Other material, such as green food, charcoal, grit and shell or their substitutes, can be furnished from natural sources with but little cost. Often milk and other farm products can be substituted for some of the materials that otherwise would have to be bought. By a careful study of the given rations the poultryman will be able to supply the necessary food elements by substituting a more economical material. Of course the amounts should vary slightly with the difference in egg production and in size of fowls. If it is to be conceded that the cost of maintaining a hen for one year is \$1.50 the necessity of securing better than the average six-dozen-egg hen is at once apparent. The yearly production of such a hen has an average value of about \$1.50. The yearly production of a good layer is about twice that number, and most of the increase represents a clear profit.—Oregon Agricultural College Bulletin.

New Sprays

Every year we see an ever increasing number of new sprays on the market. Undoubtedly these sprays have merit, and as fruit growers we are very anxious indeed to secure something which will give us better results. However, we should not be so radical as to abandon entirely old, tried mixtures for something which we have never tried out. It would be better for the first year to try out the new spray on a moderate scale and see how it checks up with the older spray. In that way we will have an experiment really worth while. If we find something better than the one we are using we certainly want it. On the other hand, if we have an inferior article we should know it. Many an orchardist has found to his sorrow that he has tried something very expensive and which was not adapted to his individual needs.

Moisture Condition With Cover Crops

This year the clover and alfalfa have come on early. This is because of the early spring. Those orchardists who are growing clover and alfalfa in their orchards will have to watch the situation very carefully. Unless they are constantly on their guard they will simply be growing the clover and alfalfa at the expense of the trees. They need to watch the soil carefully and be sure enough moisture is given to the trees. Even early in the spring the clover and alfalfa can dry out the ground, and the trees will receive a very evident check. A system of irrigation should be employed, so that water can be well distributed close to the trees. The water should be distributed between the trees and the clover or alfalfa, or the space directly around the trees is apt to become too dry.

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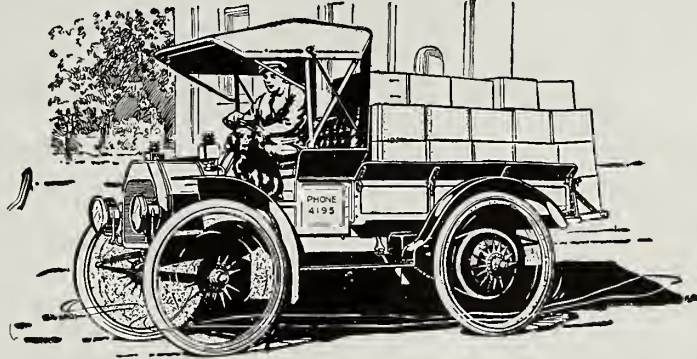
Oregon Loganberry Association

On Saturday, February 14th, about 200 longanberry growers from various parts of the State of Oregon met at Salem, under the auspices of the Salem Commercial Club, to complete the formation of a state-wide loganberry association. The association will be known as the Oregon Loganberry Association. The objects, as given in article II of the constitution, are as follows: "The objects of this association shall be to perfect a state-wide organization of loganberry growers of the State of Oregon; to promote the industry by rendering assistance in standardizing, advertising and distributing loganberries and their products; to maintain a bureau of statistics, and to render any assistance to growers which may seem helpful in production of the crop, and secure a market at an adequate price for the crop."

In order that the state can have good representation, the constitution provided for an advisory committee. Article IV, section 2, reads as follows: "Advisory committeemen to serve until the next annual meeting may be appointed at any time by the board of directors from each community in the various counties of the state which may be designated by them as worthy of representation. When a community has been so designated, a petition by a majority of the members of the association in the community requesting the appointment of a member as the advisory committeeman of the community shall be mandatory."

As shown in article II, under objects, this loganberry association is somewhat different than most of the associations that have been organized hitherto in the Northwest. It will be noted that great emphasis is placed on standardization, advertising, distribution and on the establishment of a bureau of statistics. These are the fundamentals of good marketing. So often in organizing an association we seem to feel that what we wish to do is to get together and arrange for some way of selling the crop. The little weak asso-

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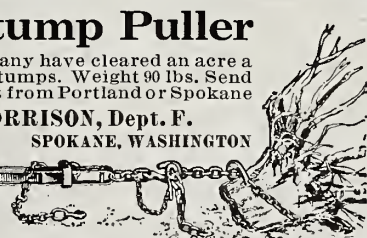
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HOOD RIVER, OREGON

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We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red shot soil with clay subsoil, producing the most vigorous root system. Our huds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

ciation has been found to be inadequate to meet the demands of the occasion. It is only by many associations working together that good results can be secured. So often the attempt is made to sell without having a fundamental knowledge as to the yield, present market conditions, etc.

This loganberry association is evidently going to try and avoid some of the mistakes which other fruit men

have made in the past. Every loganberry grower in the State of Oregon should become a member of this association. The association needs every grower, but what is more, every grower needs the association. The association is taking a great interest in fostering the manufacture of a juice which can be put on the market much the same, say, as the grape juice is being handled. They are also interested in arranging



Trade Mark

Buy "Corona Dry"

One pound of "Corona Dry" will do the work of three pounds of Paste Arsenate and do it better

Imitated but not duplicated

But economy is not everything. Efficiency is more important. What would it mean to you to have a spray mixture of standard strength and be absolutely sure that all of one spraying or of many sprayings was absolutely the same strength? Evaporation, difficulty of perfect mixing, make this impossible with a paste arsenate. You can have a standard efficiency if you use *Corona Dry*.

Largest and most progressive growers have rendered the verdict

A large practical usage in every section of the country has proved that "Corona Dry" is unequalled in efficiency or as "easy mixing." It does not freeze, dry out or cake; always retains its original strength. A perfect mixture, a perfect standard of unvarying strength is assured with

"CORONA DRY"
Arsenate of Lead
Patented June 30, 1913

The "Standard" for Convenience, Economy, Efficiency

Quickly and easily mixed. No working up—no straining needed—no sediment. No lumps. No waste. Never clogs spray nozzle. Highest per cent. of actual killing power. Absolutely safe, will not burn. Sold in net weight packages: 200 lbs., 100 lbs., 50 lbs., 25 lbs., 5 lbs., 1 lb. No shrinkage, seepage, evaporation. Every package contains actual net weight of "Corona Dry" paid for.

Remember, "Corona Dry" means no guesswork, but a standardized spray in which the mixture is always the same strength and efficiency

Write for Booklet. Ask for Corona "Tree Insurance" Policy. Address

CORONA CHEMICAL CO., Dept. E, Milwaukee, Wisconsin

MANUFACTURERS OF

Insecticides and Fungicides, Arsenate of Lead, Lime and Sulphur, Bordeaux Mixture, Paris Green, Etc.

Distributing Agents { Boston, Mass.—Joseph Breck & Sons Corporation
Philadelphia, Pa.—Pittsburgh Plate Glass Co.

Memphis, Tenn.—Hessig-Ellis Drug Co.
New Orleans, La.—Finlay-Dicks & Co.

Spokane, Wash.—Spokane Seed Co.
Portland, Ore.—Portland Seed Co.

Northwestern Sales Agents Portland Seed Co., Portland, Oregon Catalogs and prices on request

for adequate exhibits at the exposition to be held in San Francisco. The officers of this association are as follows: President, W. L. Bentley, Woodburn; vice-president, Alex LaFollette, Brooks; secretary, Fred S. Bynon, Salem; treasurer, L. H. Roberts, Salem; directors, Britt Aspinwall, Brooks, and H. E. Crowell, Dundee, together with the president, secretary and treasurer.

Bulletin Review

The Division of Horticulture of the Oregon Agricultural College has recently issued a very interesting bulletin on pollination, entitled "A Preliminary Report of the Pollination of the Sweet Cherry." The bulletin was written by Professor V. R. Gardner, associate pomologist of that institution. The work covers a period of three years undertaken in such places as Eugene, Corvallis, Salem and The Dalles. The bulletin takes up something of the relative importance of the cherry pollination problem in Oregon and points out why this problem has become acute. It takes up in detail the experiments which they have been conducting. The bulletin is very complete and well tabulated. The most startling points brought out are that out of a large number of cherries that are grown in the state, the Bing, Lam-

bert, Napoleon (known as Royal Ann) are not only sterile but are inter-sterile; that is, they will not set fruit with their own pollen. It was shown, however, that when Black Republican, Black Tartarian and Waterhouse were set with these varieties very satisfactory results were obtained. It would seem from the information secured that it would be unsafe to plant orchards which contain nothing but Bing, Lambert and Napoleon. It was found that all sweet varieties tested were self-sterile; that other good pollenizers than those mentioned are Elton, Wood, Coe, Major Francis, Early Purple. It was also found that seedling trees that are found in cherry districts are efficient pollenizers for the leading varieties. A very interesting thing found was that the Duke group of cherries are capable of pollenizing some of the Bigarreus and at least some of the varieties of sour cherries are capable of pollenizing some of the Bigarreus.

The bulletin is splendidly illustrated, having in the back a series of plates showing the fruit secured from the various crosses. This bulletin will be mailed free to all in Oregon who are especially interested in this subject and a limited number of copies will be distributed in other portions of the United States.

Cover Crops

Fruit growers who are handling cover crops for the first time need to be given a little advice concerning the proper attention and method of handling of this cover crop in the spring. Ordinarily, probably the safest advice one can give will be to advise the plowing of the ground and turning under of the cover crop at about the time that you would naturally plow your ground if you had no cover crop growing. While you may not have as desirable a growth as you would like, nevertheless it has been shown a number of times that it is dangerous to wait until late in the spring, especially if a drouth follows and you cannot supplement the rainfall with irrigation. On the heavier clay soils the cover crop may get very vigorous before the time for plowing, and in such case if a chain drag is attached to the end of the beam it will help in plowing. Where rye or oats or barley have been used in combination with vetch it is well never to let this grain get so tall and woody that it is tough. If it is plowed under in this condition it rots very slowly, and the first year the cover crop may result in producing damaging effects rather than beneficial effects. However, this is an unusual case. You must not be discouraged if the growth the first year is not just what you had anticipated.

You will probably find with leguminous crops that the growth will improve from year to year, for as more bacteria get into the ground the growth of the crops will be better each year.

The Grape Hoe

One tool which our fruit growers can use to splendid advantage is the grape hoe, sometimes known as the grape harrow or grape cultivator or grape plow. This hoe is being used by many of the small fruit growers on the Pacific Coast to splendid advantage and could be used in our young orchards. It will do the hand hoe work of a dozen men. It is provided with a wheel and handle so it can be steered easily, and it will scrape out the weeds and level up the ground. This is a grape implement which has been used to splendid advantage for years in the grape regions of the East, but there are splendid opportunities for its use in orchard work here on the Pacific Coast, when our growers become acquainted with its merits.

Walnut Trees

We have had an unusually early spring. Vegetation has come on with a rush. It has been a splendid spring to note what the walnut trees were doing. The really valuable trees are very slow in coming into foliage. Franquettes and Mayettes are very rarely damaged by frost. Those walnuts starting early in the spring are either inferior seedlings or softshell types, like the Santa Barbara, and are not adapted to our climatic conditions. Such trees should be dug out, or in some cases top-grafted to more desirable varieties.

Cover Crops Growing Heavy This Year

We have had one of the most marvelous winters in the history of the Northwest; consequently those growing cover crops have found the crops have grown very vigorously. The frequent rains have at times made it hard to plow the heaviest soils, but these same rains, however, were conducive to a very vigorous growth of cover crops. There is a danger, especially where rye has been used, that the cover crops will be too high and tough, and they will decay very slowly in the soil. Especially is this true with rye, or if any cereal may be used which becomes woody and forms a dry stalk. In plowing under these cover crops, however, you can occasionally get very good results by disking before plowing. By putting a heavy chain on the plow the work can be done more easily than otherwise. The chain drags down the crop and makes it easier to turn the following furrow. Good disking will be necessary to chop up the heavy sod from cover crops. Occasionally growers who are handling crops on light soils make the mistake of plowing and then following with an instrument such as the springtooth harrow, thus pulling the cover crop on the top of the ground.

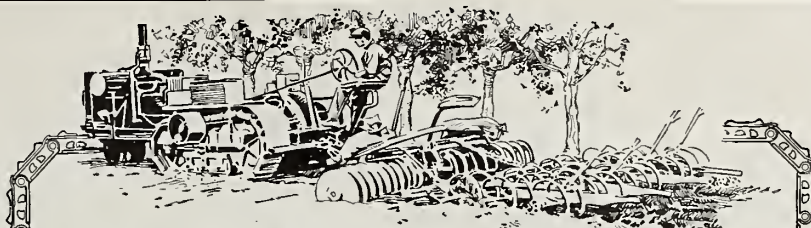
This is a mistake. The cover crop should be chopped up before any such tool as a springtooth harrow is used to pull it to the top of the ground.

The blossoms throughout the Northwest have generally been reported to be very heavy this year, indicating that there will be a good sized crop of fruit of all kinds.

Mr. E. A. Frazier, of the Niagara Spray Company, was in Hood River during the past month examining the

orchards which had been sprayed with soluble lime and sulphur, and seemed very much pleased with his observations.

The Department of Agronomy of the Oregon Agricultural College is making an experiment with 120 farmers in the Willamette Valley and Coast counties to secure definite data in reference to ground limestone for acidity in soils, and to ascertain the outside price that may be paid for ground limestone at which it can be used with profit.



Make Your Orchard Pay

Save the moisture. It means more and better fruit. Keep the ground cultivated without packing it down as fast as you stir it up. The only power that will do this *right* is the Baby Caterpillar. It does not pack the soil nor spoil the mulch around the trees. The long, wide Caterpillar tracks distribute the weight over more than 1,300 square inches. That makes about 7 pounds' pressure to the square inch—less than that of a horse or a man of 170 pounds' weight.

CATERPILLAR

Reg. U.S. Pat. Off.

The Caterpillar handles easily, turns short from one row into the next and works close up to fences and corners. Without the canopy it is only 58 inches high—you can cultivate right up under the trees without injuring the branches.

The Baby Caterpillar is *guaranteed* to do the work of 14 average horses. It has plenty of power for plowing and for hauling fruit and other produce to market. The Caterpillar tracks let no energy go to waste in slipping. They deliver more horsepower from the motor to the draw-bar than round-wheel tractors possibly can, especially in soft or wet ground.

By means of the stationary power attachment, you can use the Baby Caterpillar for threshing, sawing, pumping, grinding feed or for any belt work. The Caterpillar is a practical, all-round tractor that can be adapted to dozens of uses on your ranch. Economical of fuel, easy to operate, cheap to maintain. You ought to know about the Baby Caterpillar because of the dollars and cents it will save you if you are still working with horses.

Ask our nearest branch for catalog BE 53 which will give you full information.

Everything for the power farmer—harvesters, disc and moldboard plows, harrows, scrapers, supplies and lubricants.

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TO DESTROY APHIS, THRIPS, ETC.

Without Injury to Foliage

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"Black Leaf 40" is highly recommended by Experiment Stations and spraying experts throughout the entire United States.

Owing to the large dilution, neither foliage nor fruit is stained.

Also, "Black Leaf 40" is perfectly soluble in water; no clogging of nozzles.

PRICES

10-pound Can \$12.50

Makes 1,500 to 2,000 gallons for Pear Thrips, with addition of three per cent distillate oil emulsion; or about 1,000 gallons for Green Aphis, Pear Psylla, Hop Louse, etc., or about 800 gallons for Black Aphis and Woolly Aphis—with addition of three or four pounds of any good laundry soap to each 100 gallons of water.

2-pound Can \$3.00

½-pound Can85

If you cannot obtain "Black Leaf 40" from a local dealer, send us P. O. Money Order, and we will ship you by express at the above prices (for the United States), prepaying the expressage to your nearest railroad town in the United States. There is a duty charged on all shipments made into Canada.

The Kentucky Tobacco Product Company

INCORPORATED

Louisville, Kentucky



This is an Era of Special Crops

Fruit Is A Necessity

And the better the quality of your fruit, the more money it will bring you. Experience has shown that most soils contain too little available plant food for maximum results—especially in fruit growing. Inasmuch as earliness and edibility in fruit is very important, it is plain to be seen why growers are using more and more of

Beaver Brand Animal Fertilizers

"A FERTILIZER FOR EVERY CROP"

MADE BY THE

UNION MEAT CO., NORTH PORTLAND, OREGON

This fertilizer contains sufficient animal plant food to meet the soil losses from each year's crop. By its use an increase in quality and quantity is possible, as well as putting unprofitable land on a paying basis.

Beaver Brand Animal Fertilizers are rich in high grade organic nitrogen and make your land rich in the constituent elements that produce profitable crops.

Place your order now for this famous fertilizer. Send for Fertilizer Booklet F37.

Union Meat Co., North Portland, Oregon

Storage and Use of Soil Moisture

The Nebraska Experiment Station has just issued Bulletin No. 140, on "The Storage and Use of Soil Moisture." This bulletin is a brief discussion of work done at the North Platte substation relative to the storage and use of soil moisture. It treats of the possibilities of storing water in the soil during certain periods, to be used later in conjunction with the rainfall. Several of the factors influencing the storage of water in the soil are discussed.

Summer tillage has been the most effective method of storing water, but even by this method only from 10 to 33 per cent of the seasonal rainfall has been stored in the soil. A discussion of the amount of water retained by summer tillage during each of the past several years shows that the amount of water stored varies with the amount and distribution of the rainfall during the period covered by the summer tillage. It has been found that water stored in the soil before seeding is a safeguard against drouth, but it has not been found possible to store enough water in the soil before seeding to mature a crop without subsequent rains.

Disking small grain stubble has proved beneficial by preventing weed growth, whenever there has been sufficient moisture in the soil at harvest time to produce a growth of weeds, or where rains have come early enough to start weed growth.

Plowing has been better than disking, in that it more thoroughly kills all weed growth, and in the case of heavy rains plowed ground will absorb more water than disked land because it is more thoroughly stirred.

Artificial mulches of straw or hay have proved more effective than soil mulches in absorbing and retaining water from rains.

Spring wheat, oats, barley and corn feed to an average depth of four feet in this soil. Winter wheat feeds to a depth of six or seven feet. Alfalfa and grasses use water from greater depths.

Weeds are the greatest agency for the loss of water from the soil. Preventing weed growth has been more important from the standpoint of storing water in the soil than cultivating the soil to produce any kind of a mulch.

The storage of water is summed up in keeping a loose, rough surface to absorb the rains quickly, and in preventing growing vegetation from using the water.

Mr. Delbert Utter, connected with the propaganda department of the German Kali Works, at the San Francisco office, called at the office of "Better Fruit" and informed us the department would conduct some experiments with fertilizer in Hood River Valley this fall.

The California Horticultural Society will hold the biggest meeting ever held by fruit growers on the Pacific Coast at Davis, California, June 1 to 6. Over 150 addresses will be given, relating to every feature connected with the orchard industry.

Here is Super-Strength

Reo the Fifth

is designed by a man who believes in super-strength. He has learned this need through 27 years of car building.

In this 35-horsepower car, every driving part is made to meet the requirements of a 50-horsepower engine. And every test goes far beyond the usual requirements.

For Instance

For years we have kept test chassis on the road. Relays of drivers have run them at high speed night and day. After 10,000 miles of this reckless driving we take the car apart and inspect it.

Not only must the chassis stand that test, but every vital part must stay new. It must show but little evidence of wear.

We could build this car for one-

fourth less by just skimping the hidden parts. Under normal conditions it might for a time serve you as well as this. But it could not stay new. And it might cost you hundreds of extra dollars in troubles, repairs and upkeep.

Does It Pay?

It pays us to give you the utmost in a car. We have in this way held the lead in our class. The demand for such cars has grown and grown, faster than we could supply it.

We are building for the future—for what men will say five years after buying the car.

It also pays owners to buy such a car, when they buy a car to keep.

Go and See

Go see this car. See the handsome streamline body, the perfect

equipment, electric lights and starter, deep upholstery, perfect finish.

Then go below all that. Get the details of this costly chassis. Find out why each car is six weeks in the building.

Then note how low we have brought the price. Last year's price was \$1,395, with electric starter and lights. This year it is \$220 less. Most of that saving comes from the fact that all our special machinery for building this car has been charged against previous output.

We are giving you here the best we know, regardless of time and cost. The more you know about motor car troubles, the more such a car will appeal to you.

Ask us for address of nearest dealer. We have them in a thousand towns.

REO MOTOR CAR COMPANY, LANSING, MICH.

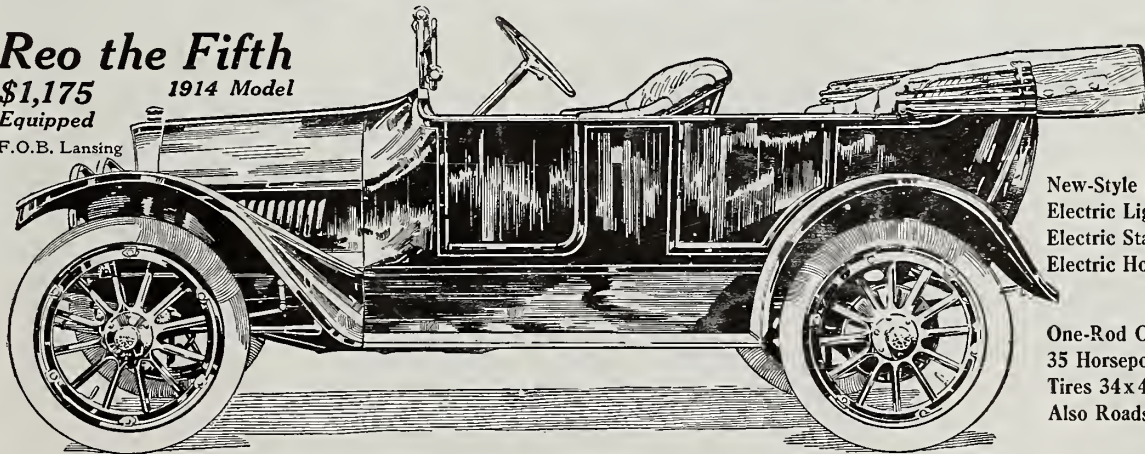
Canadian Factory, St. Catharines, Ont. Canadian Price, \$1,575

Reo the Fifth

\$1,175
Equipped

F.O.B. Lansing

1914 Model



New-Style Body
Electric Lights
Electric Starter
Electric Horn

One-Rod Control
35 Horsepower
Tires 34x4
Also Roadster

(249)

A Merchant Unawares

Mr. W. F. Gwin, General Manager Northwestern Fruit Exchange, before Washington State Horticultural Meeting
Walla Walla, December 19, 1913

MY ATTENTION was arrested, recently, by a comment dropped by a shrewd, successful merchant from the East who happened to be thrown into contact with the growers in one of our principal fruit districts here in the Northwest. In a perfectly kindly and helpful spirit and without meaning to criticize he said: "What impresses me about these growers more than anything else is that very few of them look at their business from a real producer's or industrial viewpoint, but their attitude toward their business is almost universally speculative. At heart most of

them are speculators, not serious producers." To a larger extent than is desirable, this criticism is a just one. It is inevitable that the speculative tidal wave in orchard realty should have swept into orchard ownership thousands of men who were speculators first and foremost, and farmers or horticulturists incidentally or perforce. Many of these thousands were left stranded in an alien and uncongenial occupation when the tide receded. Sooner or later, these men will be converted into genuine producers, or else they will give place to others who are. Meanwhile, it is not strange

that, up to now, the methods employed by a large percentage of the growers in the disposal of their product should be those of a speculator rather than those of a merchant. The purpose of this article is to draw into sharp contrast these two methods, and to show how utterly imperative it is that the speculative methods be abandoned without delay and the merchant methods adopted.

In the first place, we have got to recognize the fact that where as Pacific Northwest boxed apples were, in the first years of the industry, a safe and highly profitable speculation

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"Most practical Plan Book we've ever seen," is what dozens of Building Age readers are writing us. You'll say the same when you get your copy. There are at least fifteen or twenty of the 100 plans in this book that you can use. You'll get lots of new ideas and new arrangements. Write for this book today, enclosing 10 cents (stamps or coin) to cover cost of mailing. Cost us \$30,000 to get out this book. Costs us 30 cents apiece for paper and printing alone. Send for your copy today.

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BOSTROM IMPROVED FARM LEVEL



SHIPPING WEIGHT IS LBS.

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which has TELESCOPE enabling you to read the Target over 400 yards away, and

TERRACE, DITCH, TILE DRAIN, IRRIGATE

your land properly, and save surveyor's fees. It is sold by up-to-date hardware and general merchants everywhere, and guaranteed to be the most

SIMPLE, ACCURATE, DURABLE AND COMPLETE

outfit ever made for all farm work. If your dealer hasn't one in stock, he will order for you from Portland, Seattle or Spokane hardware jobbers.

Write today for description of Level, and details of our MONEY BACK GUARANTEE.

BOSTROM-BRADY MANUFACTURING CO.
120 MADISON AVE. ATLANTA, GA.



OREGON SILO

FRUITGROWERS
No Waste or Loss of
Ensilage with the
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It is slightly, substantial, durable and stable. Made of the best grade of Washington and Oregon Fir, straight grained, clear and unsurpassed for serviceability. No splicing, no knots, no warping or twisting. Only silo in the world that has an adjustable roof joint connecting the roof with the sides, drawing the top of the Silo to a true circle in one operation. This feature is the last word in Silo construction. Send now for Booklet 28. It contains Silo Facts you should know.

Monroe & Crisell
"The Simplex Line"
Dairy Supplies
Oregon Silos
126 Front St., Portland, Ore.

for Eastern dealers, they have ceased to be an attractive speculation. This statement is based on the general position, not on any exceptional season. The reasons for the change are manifest but are principally because: First, production has reached a volume which renders control of the supply impractical, whereas under former conditions control was easy and was depended on to render the speculation safe; second, competitive apple producers, everywhere throughout the country, have improved their cultural and mechanical methods and thereby have raised the standard of their product and narrowed the quality gap. The vital importance of this feature is seen when it is remembered that the principal markets for Northwestern apples are right in the midst, as it were, of our competitors' orchards, and that with a freight handicap of about 50c per box, or \$1.50 per barrel, our very economic life depends on the maintenance of a high average of superiority in our quality as compared with our competitors'; third, whereas formerly, the apple enjoyed an easy monopoly of the public appetite for fruit, there have sprung up, in comparatively recent years, strong competitors for the popular demand. Apple growers in fatuous complacency have like Nero, "fiddled, while Rome burned," and it is a ghastly truth that apple consumption, per capita has dwindled in a most alarming manner, while consumption of bananas, oranges and grape-fruit has grown by leaps and bounds, under the organized, aggressive methods of their promoters. The sooner you get this firmly fixed in your minds, the better. The old familiar demonstrations of the actual decrease in the number of bearing apple trees and in the production thereof, within twenty years, while during the same period the population has greatly increased, etc., while true enough in fact are nevertheless, to a large extent, dangerous sophistries. Such statistics should be accompanied by others showing the growth of the banana industry within the same period from almost nothing to over fifteen millions of dollars annually, in this country alone, beside which their introduction has been forced in Europe in spite of actual opposition of the trade, and a business created of many millions annually. They should be accompanied by statistics showing the growth of grape-fruit consumption from nothing twenty years ago, to a huge industry, employing millions of money and thousands of acres. They should be accompanied by statistics of the orange industry and its growth of over 100,000 carloads consumed in this country annually over the consumption twenty years ago. They should be accompanied by an account of the great advertising campaigns costing hundreds of thousands of dollars waged by the citrus and banana people in the fight for the consumers' appetite, while apple growers have stood idly by. I say, get this fixed in your minds, for it comes nearer to



Why Do The Churning by Hand?

when an Eclipse Engine will do it at a cost of $1\frac{1}{2}$ cents per hour for gasoline. High grade—Four Cycle Engines, two sizes, at moderate price.

Send for Catalog No. G N 1233

Fairbanks, Morse & Co.
Portland Spokane Seattle
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BUY AND TRY

White River Flour

MAKES

Whiter, Lighter Bread

accounting for your industrial ills than faulty distribution, important though that be. Happily, there are remedies. There are other reasons why boxed apples are no longer an attractive speculation but the foregoing are enough.

With unimportant exceptions, the cash buyer is a speculator, rather than a conservative merchant. It suffices to say that being a speculator he is conspicuously present when he is not needed, and conspicuously absent when he is needed. This has been proven to the fruit growers again and again and again, and yet a large element of the growers have forgotten the lesson again, and again, and again, and depending on the speculator for a market in the years when he has failed to appear, have waited until the last moment, refusing to co-operate with anybody, and then throwing their holdings indiscriminately and unwisely on the open market have helped break the market and bring loss upon their fellows as well as disaster upon themselves. Mind you, this is not an argument against the cash buyer or speculator. He forms part of the demand and ought to be accommodated. But he ought not be depended on and waited for until the last moment, which to too great an extent he is. Nor should he be recognized at all by individual growers but dealt with only through growers' organizations. The point I am making is that growers who conduct their business in this manner are speculators themselves, are out of harmony with the economic progression, and are doomed to eventual failure unless they change their methods. The next point is the typical attitude of the grower toward his customers. It is one of suspicion, distrust and antagonism. This attitude on the part of the grower is so deep-rooted that it extends even to those who are his agents or employees in dealing with the trade. Human nature is quick to respond in kind, and this attitude is mutual on the part of both grower and dealer. The grower believes the dealer to be the cause of most of his troubles and to be a pretty undesirable citizen generally; the dealer cordially reciprocates this opinion. The facts are that both are average human beings, and therefore, partly good and partly bad. One of the hardest tasks that confronts the managers of the growers' distributing agencies is the correction of this mistaken estimate that grower and dealer have of each other, and the cultivation in the grower of the merchant's attitude toward his customers. The next point is the lack of general recognition by the grower that his business is really manufacturing, and the importance of co-operation with his business managers in turning out a factory product which meets the exacting requirements of a discriminating trade. The desire of the farmer is to sell what he produces, more or less accidentally; the aim of the manufacturer-merchant is to produce and sell what the trade is calling for—in the grades wanted, of the

Two or Three Battery Breakdowns Will Pay for a Wizard

Hasn't this happened to you?
At threshing time, engine goes dead from exhausted batteries. Two hours lost getting new ones from town. Sixteen men idle.

Two or three such breakdowns will pay for a Wizard Magneto that will give uninterrupted service throughout your engine's life. Its hot, sharp spark will get all the power out of the fuel. Its simple, rigid, waterproof construction insures against ignition trouble.

Insist on a Wizard when you buy an engine. Get one for the engine you own. There's one for every make and size of engine and every one's guaranteed. Ask your dealer to write us for details.

Send for Free Book
"The Happy Engine Owner," which explains fully about ignition and shows also how to remedy or prevent most engine troubles.

The Hercules Electric Co.
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150,000 Wizard Magnetos are used on such engines as:

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WIZARD MAGNETOS

The HAPPY ENGINE OWNER





Our \$475 Player Piano

☛ We carry only one line of Player Pianos—that of the Aeolian Company, makers of the world famous Pianola Player Pianos.

☛ The lowest price Player Piano of the Aeolian Company is the **TECHNOLA**—a full scale, 88 note instrument, with the latest improved Expression Devices and with every facility to enable the person with no knowledge whatever of Piano Playing to produce the most artistic results.

☛ The Technola has been built primarily, to stand many times more usage than the usual "straight" piano. Latest plain Colonial Case in the finest Mahogany or Oak.

Your Piano Accepted in Exchange. Moderate Payment Terms

Sherman, Clay & Co.

VICTOR TALKING MACHINES PIANOLAS
STEINWAY, WEBER AND OTHER PIANOS

Morrison at Sixth, Portland, opposite Post Office



Mr. W. A. Johnston of The Dalles shipped a car containing 200 Kimball Cultivators to Michigan, which is the first carload of implements ever manufactured in Oregon and shipped East. The Oregon-Washington Railroad & Navigation Company officials had the car spotted and Mr. Johnston had a photograph taken. On the side of the car was tacked a banner which read, "The First Car of Agricultural Implements Made in the West and Shipped East. Kimball Cultivators, Manufactured by W. A. Johnston, The Dalles, Oregon."

The Best Implement for Successful
Orcharding is the

KIMBALL CULTIVATOR

The Great Weed Exterminator

It not only preserves the moisture, but destroys the hiding places of insects, such as curculio, which are often serious orchard pests. Apples grown in cultivated orchards ripen later, and consequently keep longer. They are of larger size and are usually smoother.

The cost of cultivation is not excessive if Kimball Cultivators are used.

The Kimball Cultivator is made in all sizes, which enables us to give anyone the size necessary to do his work, whether he needs the 4½-foot size for the small farm or the 17-foot size for the large summer fallow fields. We recommend the 8½-foot size in most cases, as it is the best size for two horses, and better work can be done with it than can be done with other sizes.

Note prices on various sizes quoted below. Send in your order at once, or write by return mail asking for booklets and particulars. All quotations are f.o.b. The Dalles, Oregon, but we will arrange to have a carload in some Eastern city for the spring of 1914, so that shipments may be made direct from that point.

Retail Price Schedule of Kimball Cultivators

	Price
No. 4. 4½ feet, 6 blades, weight complete 70 lbs.....	\$13.50
No. 5. 5½ feet, 7 blades, weight complete 85 lbs.....	15.00
No. 6. 6 feet, 8 blades, weight complete 100 lbs.....	17.50
No. 7. 7 feet, 9 blades, weight complete 115 lbs.....	18.50
No. 8. 8½ feet, 11 blades, weight complete 125 lbs....	20.00
No. 9. 10 feet, 13 blades, weight complete 140 lbs.....	25.00
No. 10. 12 feet, 15 blades, open center, weight complete 160 lbs.....	22.50
No. 11. 12 feet, 15 blades, weight complete 185 lbs....	30.00
No. 13. 18½ and 19 feet, 23 blades, gangs fully rigged, weight complete 300 lbs.....	47.50
Extra Frames \$1.00 per foot; weight 10 lbs. per foot.	
Extra Blades \$1.50 each; weight 5 lbs. each.	

You need the Kimball Cultivator in your business. Write at once and arrange to have one of these implements ready for your spring work. Mention "Better Fruit" when you write.

W. A. JOHNSTON, The Dalles, Oregon

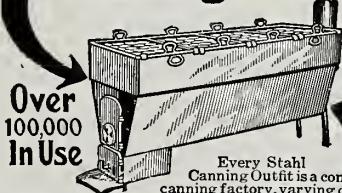
sizes demanded, and delivered when ordered. These fine points of merchandising are difficult to impress on the average grower, but where certain groups have been educated along these lines the results are wonderful, and amply repay the effort.

The other night I came home from the office and found on the library table six pairs of baby shoes. Upon being asked, my wife remarked, in a perfectly matter-of-course way, that the baby was needing a pair of shoes, and as it wasn't convenient to take him in to be fitted, she had telephoned the shop (mentioning a leading department store) to send out six pairs,—different styles and sizes, from which to make a selection, but that she would have to send them all back as none of them suited. My residence happens to be about four miles from the store; the shoes had to be taken out of stock, a charge passed through the books, and the parcel delivered, all with the possibility of selling only one pair. As it was, no sale was made, the merchant had to send after the goods, haul them back to the store, pass a credit through the books, and restore them to the stock from which they were absent several days. In all, the transaction cost the merchant the time of the department clerks, delivery clerks and accountants; and transportation eight miles; several days' interest on the cost of the merchandise; wear and tear on the merchandise and the risk of losing other sales because of withdrawal from stock of certain styles, of which the samples might be the only specimens. If this were an exceptional case, I might feel some hesitancy in telling it, but it isn't, as everyone knows who lives in a modern town or city or anywhere within the service-zone of up-to-date shops. Neither need the incident excite either pity or contempt for the merchant, for it illustrates an idea which underlies the whole practice of modern merchandising; and on which is founded the great fortunes of many of our merchant princes. Stop for a moment and contrast this incident with a rejection of a car of apples by an Eastern dealer. In the case of the department store, the shoes were taken back without argument and the customer made to feel that by accepting the service of the store the customer was conferring a favor on the merchant; in the other case the fruit dealer is likely to be told, more or less plainly, that he is a horse thief, and the truth not in him. All the latent antagonism between the two is roused and a really equitable or amicable adjustment rendered difficult if not impossible. This attitude works evil in innumerable ways; as long as it endures there will be the feeling that it is legitimate for either to "put one over" on the other. As an impartial referee, I must say that in this sort of engagement the grower has every advantage, and too often does not hesitate to use it, especially on a strong market. To illustrate: The grower knows far more about the commodity he is selling than does the cus-

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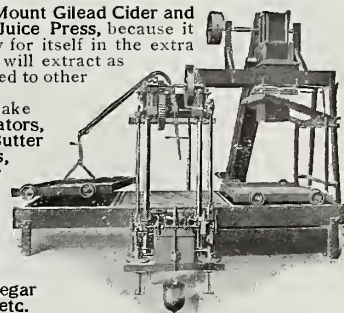
tomater. Therefore, the problem of protecting himself against the dishonesty of his customer is comparatively a very simple problem. For instance, the buyer doesn't know whether the apples were grown under conditions that produce fruit not apparently but inherently defective; the grower knows. The buyer doesn't know whether the fruit was exposed to the elements and some or much of its keepability lost,—frequently the difference between a profit and a disastrous loss; the grower knows. The buyer doesn't know whether the car is "plugged" or not, that is, good fruit in the doorways and on the top layer, and poor fruit buried in the load; the grower knows. There are many more things, unnecessary to enumerate, that the grower knows about the merchandise and the buyer doesn't. Therefore, considering the history, practices and ethics of the business, and remembering that the dealer is required to put up a standard dollar for an article that in many cases is far short of standard, you will admit that even if the grower's salesmen try to give the dealer a square deal, he will get the worst of it unless he is an exceedingly shrewd trader. All this leads to the conclusion that the relation between grower and dealer needs improvement and correction, and for the reasons stated, the dealer needs protection from ourselves far more than we need protection from him. One of the principles of modern merchandising is that in selling goods to absent customers more care has to be exercised than if the customer were personally present.

Finally, the whole matter of terms and conditions of sale in the fruit trade need revision. There are some strong advantages in the customary c.o.d. terms as against spot cash f.o.b. terms. One is that greater care will be taken in grading and packing if fruit must undergo inspection and acceptance at destination; another is that credit assists trade, and for the dealers to have the use of their money for the week or two the cars are in transit adds to their buying power. The United Fruit Company have gone even further on the same principle and allow ten days' credit to their customers whereby they are said to have increased their business enormously and their losses scarcely at all. The credits, however, take very expert handling and this cannot be gone into hastily or without elaborate facilities. The most successful merchants of the country today—John Wanamaker, Marshall Field, and others, are almost unreasonably liberal in their terms. They allow goods to be returned with or without reason, and submit cheerfully to the most unreasonable whims and impositions on the part of their customers. Why? Because they have learned by experience that their customers buy so much more freely and readily and willingly pay higher prices on easy terms than on rigid terms. Therefore, the up-to-date merchant adds a sufficient price to cover cost

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"—geography doesn't count with us—Uncle Sam goes everywhere—any time—all the time. I ship to the four corners of the globe—I ship promptly, and save you money on every item I ship—doors, sash, windows, columns, stairways—everything in fact needed in the construction of a home, barn, garage or any part thereof."

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WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

of rejections, returned goods, etc., thereby operating his business on a sufficiently elastic scale to promote harmony and large volume. Some of these practices are directly applicable to the fruit business. It is high time we were recognizing customers as valuable assets and not necessary evils; catering to them, not cussing them, for if there ever were an industry with big handicaps needing scientific management and the most up-to-date merchandising methods, it is ours. Merchant unawares, awake!

The Fruitgrower of Today

THE fruitgrower of today, particularly in the Northwest, is building for the future. He is past the pioneer period of temporary improvements, consequently nearly all construction work is being done with a view to permanency. A few years ago the ordinary irrigation flume was laid on the ground. Nowadays the fruitgrower who builds a flume builds it in a businesslike way. The editor has just completed a splendid flume. The mud sills were made of cedar, all of the framework was soaked in wood preservative, the lumber used was stiff one and one-half-inch stuff surfaced and edged, the flume was painted inside with preservative. Fruitgrowers are now building many packing houses. They are building them not only to last but to afford protection against all kinds of weather conditions. In building packing houses they are using building paper between the wall boards and the best of waterproof roofing, so as to afford the best of protection and at the same time make their packing houses lasting.

A Patriotic Creed

WE BELIEVE in our country, the United States of America. We believe in her constitution, her laws, her institutions, and the principles for which she stands. We believe in her future—the past is secure. We believe in her vast resources, her great possibilities—yes, more, her wonderful certainties.

WE BELIEVE in the American people, their genius, their brain, and their brawn. We believe in their honesty, their integrity and dependability. We believe that nothing can stand in the way of their commercial advancement and prosperity.

WE BELIEVE that what are termed "times of business depression" are but periods of preparation for greater and more pronounced commercial successes.

AND WE BELIEVE that in our country are being worked out great problems, the solution of which will be for the benefit of all mankind.

"American Peach Orchard," by F. A. Waugh, published by R. M. Judd & Co., is a very interesting and instructive book in reference to the peach industry, peach growing and all methods of treatment, cultivation, spraying, etc.

Foreign Markets Oregon, Etc.

Continued from page 10

porter states that Australian apples arrive fresher than Pacific Coast apples and are preferred.

Generally speaking, the quality of boxed apples is satisfactory, while this is very often not the case as respects apples in barrels. The boxes are 1.6x 11.4x18.5 inches and contain one bushel of fruit. The statement is made that "they are not strong enough to carry a distance of 7,000 miles and more, and the fruit arrives very often in a bruised state." It is urgently advised that shippers provide stronger boxes, remembering that the cases must be dropped over the sides of arriving vessels in chain slings, so that the frail boards are subjected to great pressure, and even when they do not break frequently yield, thus bruising the contents, an injury naturally reflected in the prices realized for the fruit. During the season of 1912-13 prices ranged from \$1.66 to \$2.14, the prices being low and arrivals three times heavier than the preceding season. Apple varieties recommended for shipment to Hamburg are the Newtown Pippins, Winesaps, Spitzenbergs, Rome Beauties, Delaware Reds, Commerce, Kings, Ganos and Black Bens.

Pears could be shipped from the United States in September and November only, and during these months meet the competition of Bohemian pears, which are low in price. The prospects for the development of trade in this fruit are not especially encouraging. Peaches, cherries, plums and apricots are all grown in Germany or imported from Italy and France. If it is proposed to export these fruits to Germany it is advised that experiments be made with care and upon a limited scale.

INDIA

There is a large and constant demand in Madras for fresh apples of good and medium grades. At present the supply is in part obtained from the interior districts of India and part from Australia. The products from both of these sources are much inferior to the average American fruit of the same character. Australian apples of very ordinary quality and condition retail readily in Madras for sixteen cents per pound, the fruit averaging about five apples to the pound. Native-grown apples of corresponding quality command practically the same price. Many of the Australian apples arrive in bad condition, due partly to the unsuitability of the stock for export purposes and partly to inferior packing.

The problem American shippers of fresh apples would have to solve in order to enter this market is that of sufficiently rapid transportation. At present it takes goods from Atlantic ports of the United States 45 to 60 days to reach Madras, and from Pacific ports a somewhat longer time is needed. All cargo from American to India ports must be transshipped, with consequent delay. Prospective shippers of apples to Madras should first endeavor to arrange with the proper steamship lines



Did you have Spray troubles last season? Some growers had very serious ones.

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Why not use an ARSENATE OF LEAD that has successfully weathered the varied climatic conditions of Washington, Oregon, Idaho and Montana the past four years?

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Ask your local or state authorities. They are best qualified to advise as to local conditions.

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C. J. Sinsel	Boise, Idaho
Yakima County Horticultural Union	North Yakima, Washington
Zillah Fruit Company	Zillah, Washington
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Utah Fruit Growers' Association	Salt Lake City, Utah

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Will not injure trees. Easily applied with wooden paddle. One pound makes about 10 lineal feet of band. One application remains sticky 3 months and longer—outlasting 10 to 20 times any other substance. Works alike, rain or shine. Won't soften—won't run or melt, yet always elastic, expanding with growth of tree. No mixing—simply open can and use.

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1-lb. cans 30c; 3-lb. cans 85c; 10-lb. cans \$2.65; 20-lb. cans \$4.80.

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and, if practicable, with forwarding agents having representatives at the points of transshipment, to have special attention given to their shipments in order to insure careful handling while in transit and the quickest possible delivery. The shippers should then consign a sample box of apples to reliable firms in Madras, whose names can be secured from the Bureau of Foreign and Domestic Commerce, for the combined purpose of introducing their product and of ascertaining the time occupied in transit and the condition of the fruit upon delivery. Providing the apples were received in satisfactory condition no difficulty would be experienced in disposing of them at good prices. At the time the consignments were shipped the firms would be duly notified and prices furnished to them. It would be advisable to also notify the consulate at the time of shipment.

ITALY

An abundance of fresh fruit is produced in Italy, making it a waste of time for American fruitgrowers to attempt to sell fresh fruit on that market.

JAPAN

Apples raised in Japan are put up in boxes, usually being packed in sawdust, the box being the size of the one containing two five-gallon petroleum cans. The Japanese apples retail at from one to three cents each. There are scarcely any good American apples on the market. Peaches sell retail for from one and one-half to four cents each. Apples have been grown commercially in Japan but about twelve to fifteen years. It is not in use in the common diet of the people, its principal use being for afternoon tea, etc., and for children. Apple jam and other forms of cooked apples are almost unknown among ordinary Japanese families. The latest statistics on apple growing give 2,279,362 trees, with an annual yield of 52,044,968 pounds. The production of apples is therefore about one pound per capita.

Japan imports few apples, but its exports are increasing, being over 8,000,000 pounds in 1911, valued at \$222,000. The wholesale quotations in February, 1912, ranged between \$2.50 and \$3.50 per 100 pounds net. Each village or county in the apple-producing districts has an association which regulates size of cases, packing, etc. The total imports of fresh fruits and nuts into Japan in 1911 was slightly in excess of \$30,000. Very few American apples were imported. With a tariff of approximately \$1.50 per 100 pounds on this fruit it seems there are serious obstacles to overcome in placing American apples on the Japanese market. A large part of the American apples that are imported into Japan are consumed by the foreign communities.

The apples commonly sold in Japan are grown in Hokkaido and are shipped to all parts of Japan. They are sold at retail, not by the box but by the piece, the usual price being two and one-half cents each. It is doubtful if apples from the United States could compete

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The Natural Plant Food and Permanent Soil Builder

1,000 pounds per acre once in each four years will cost about \$1.00 per acre per year. At Pennsylvania State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Experiment Station \$1.96½ gave \$22.11—over 1,000%. At Ohio Station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 pounds of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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with the home product, as the Hokkaido-grown apples are rapidly improving in quality and the business is assuming large proportions.

MEXICO

Some years ago apples were unknown to most Mexicans, but recently the general public has become better acquainted with the American fruit, due to the fact that refrigerator cars were run from California to Mexico City and other parts of the republic. The apples arrived in good condition and were vigorous competitors of the Mexican tropical fruits. The demand spread to the lower classes of Mexicans, being sold on the stands of the ordinary fruit vendors on the street corners. Now apples are to be rarely seen. Before practically all had entered the country by rail, shipments by water being almost unknown on the east and west coast. Owing to the present danger of delays ruinous to fruits dependent upon quick delivery and refrigeration apple prices have risen. If growers of apples in the United States will begin to ship by water at prices sufficiently low to put their product within the purchasing power of all it will be easy to revive the popularity enjoyed by apples a few years ago. Unless they are cheap, however, they will not sell, for otherwise the Mexicans will content themselves with their local fruits. Faulty packing or bad fruit will mean a cessation of the demand.

THE NETHERLANDS

Most of the fresh apples received in The Netherlands are imported through Rotterdam from the United States, Australia and Nova Scotia. The greater part of the apples imported in 1912-13 were Australian, selling from \$1.58 to \$1.70 per fifty-pound box. The supply depends entirely upon the home crop. Ordinary varieties cannot be imported on account of the high freight and import taxes. Cold-storage facilities at Rotterdam do not exist. As a rule the quality of apples imported is satisfactory because the fruit is usually a substitute for the better grades, and it does not pay to ship inferior qualities on which the charges are nearly the same and the risk of arriving in good, sound condition so much greater. Several very good varieties are produced in quantities sufficient for the demand of

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IT'S EASY WITH



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One second nothing but level marsh. Bang! There's your ditch. One man can do it alone. Quick, cheap and efficient. To learn how write for Free Farmer's Handbook No. 29 F.

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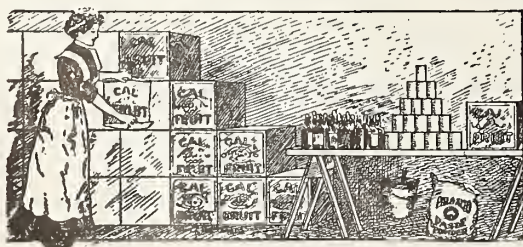
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We offer for the coming season the most complete and best selected stock of both FRUIT AND ORNAMENTAL TREES in the country. If you want home grown, first-class stock, handled under closest observation of all details which long experience alone can teach, you are the man we want to supply. Write today for prices or see our representative in your section.

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added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of ten cents a gallon. No labor. No muss. No spoiled paste.

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WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

the people and the importations are sold chiefly to the wealthier class of people, who prefer fancy American apples for table use. The apple packages generally used are barrels of 150 pounds gross and boxes 50 pounds gross, which seem to be satisfactory. The boxes, however, seem to be handier for the buyers than the barrels.

Apple prices, of course, vary from year to year, but it may be freely estimated that the average wholesale price of the best qualities in boxes is from 10 to 12 cents per kilo (2.2 pounds), or 4½ to 5½ cents per pound, whereas such apples as Baldwins, Ben Davis, Kings, Russets, etc., in barrels do not fetch on an average more than 8 to 10 cents per kilo (2.2 pounds), or .036 to 4½ cents per pound. In these prices are included the duty of 5 per cent ad valorem; there are no port charges, but the expenses of freight, commission and local charges are to be deducted from same. A scarcity of home fruit creates the greatest demand, the best season being from December to the end of May. The most popular varieties of barrel apples are Baldwins, Ben Davis, Kings and Russets; of the box apples the Jonathans, Newtown Pippins, Pearmains, Oregons, Rome Beauties and Aristo Black.

Up to the present time there has been no importation of pears from the United States; pears are being imported in limited quantities from South Africa, packed in small boxes containing from 24 to 48, according to size. As the demand is not very strong for such expensive fruit, pears are imported from London and in small quantities command high prices, ranging from four to ten cents per pear. Peaches, cherries and apricots are not imported from America. With the exception of cherries, these varieties are imported from London, also being South African fruit, but in very small quantities.

NEW ZEALAND

While oranges, lemons, bananas, etc., coming from the South Sea Islands are sometimes plentiful and cheap in New Zealand, apples, pears, peaches, strawberries, etc., are not cheap at any time, consequently consumption is restricted. For example, in Auckland, although the strawberry season lasts for ten weeks, the average retail price is twenty-four cents a box (short quart). In 1910, from January 1 to July 1, New Zealand imported fresh fruit—principally apples and pears—to the amount of \$35,370. Of this amount the United States only furnished fifty dollars' worth, the greater portion coming from Tasmania. At this time of the year the local fruit is on the market, and as the duty on the imported product is two cents a pound during this period the consumer is never able to buy apples and pears of good quality for less than four cents a pound wholesale, or six cents a pound retail. From July 1 to December 31, 1910, New Zealand imported at a duty of one cent a pound fresh fruit, principally apples and pears, to the amount of \$148,330, the United States furnishing \$50,358 worth and the balance com-

ing from Australia. This fruit retails in the New Zealand markets for eight to sixteen cents per pound. Fruit will no doubt become cheaper in the future with the increase in local production, and consumption much greater. Notwithstanding the scarcity of fruit New Zealand exported in 1910 to the United Kingdom 180,130 pounds, to Uruguay 31,080 pounds and to the South Sea Islands 3,640 pounds of apples and pears, valued at three and one-half cents per pound. The supply of fruit coming to New Zealand from the United States, both canned and fresh, is from the Pacific Coast, and the trade is consequently greatly aided by the direct steamship service with San Francisco. Almost the entire importation of canned goods from the United States consists of peaches, pears, apricots and tomatoes.

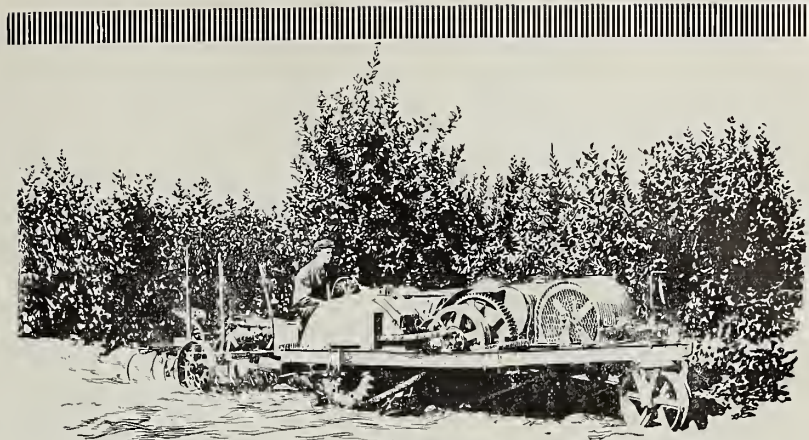
NORWAY

Approximately one-half of the apples imported into Norway are American. In 1910 there were imported into Norway the following amounts of apples and pears: From Great Britain, 1,425,732 pounds; United States, 1,099,538; Germany, 676,236; Denmark, 41,206; Australia, 14,102; Canada, 5,610, a total of 3,279,056 pounds.

Apple imports are restricted owing to the cheapness and general use of oranges, which sell in the winter season for from three and one-half to eight cents per pound. Most of the American apples coming to Stavanger are purchased by local importers in Hull and Liverpool (England), through agents who generally buy the apples at auction and supply the Stavanger firms as the demand requires, many of the Stavanger orders being sent by telegram, the apples reaching here in two days. The price paid wholesale to the English firms for the American apples is from \$4.86 to \$6.07 for a barrel of 132 pounds. The duty is three cents per 2.2 pounds, or about \$1.97 per barrel. American apples sell at retail in Stavanger at from 11 to 16 cents per kilo (2.2 pounds), the choicest varieties selling later in the season at 21 to 29 cents per kilo (2.2 pounds). The varieties most in demand are the Baldwin, Ben Davis, Russet and Kingdon.

RUSSIA

As regards fresh apples, peaches, pears, cherries, prunes and apricots Russia is practically self-supplying. The following wholesale prices may be representative of the various markets mentioned: Moscow—Apples, cheaper kinds, cooking, etc., 1 to 8 cents per pound; apples, superior grades, 8 to 14 cents per pound; pears, 4 to 28 cents a pound; peaches, 5 to 14 cents a pound; hothouse peaches, 25 cents each; apricots, 8 to 21 cents a pound; plums, prunes, 3 to 6 cents a pound. St. Petersburg—Australian apples, 54-pound boxes, \$4.12 to \$6.18 per box; pears, from \$1.54 to \$10.30 per box of 36 pounds; prunes, peaches and apricots, from South Africa, from 10 to 25 cents apiece.



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The ToeHold Tractor is not an experiment. It has proved out in actual use. Orchardists say that the

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is the first really successful cultivating tractor. Scores of ToeHolds are now in use throughout the fruit growing regions of the west.

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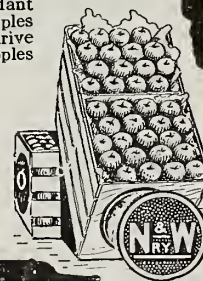
Virginia—the Fruit Grower's Paradise

Climate and soil are both particularly favorable. There are seldom late frosts or high winds. Blizzards and cyclones are unknown. The rainfall is abundant and well distributed—average 4 inches monthly in 1913. Virginia apples are the tastiest on earth and many other large and small fruits thrive equally well. Many Virginia fruit-growers are making fortunes—apples alone often netting as much as \$500 an acre.

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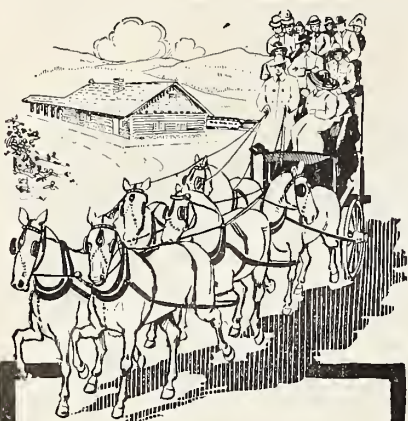
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Park Season
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A. D. CHARLTON, A. G. P. A., PORTLAND

Expensive grades of apples and pears are packed in cases containing 15 kilos (33 pounds) net weight, and in double cases of 30 kilos (66 pounds) net weight. The fruits are separately wrapped in tissue paper and are packed in two rows mostly, with interlayers of wooden shavings. The cases used for packing apples are of the following dimensions: Length, 10.3 inches; width, 4.57 inches; height, 1.7 to 2.3 inches. For packing pears: Length, 9.7 inches; width, 4 inches; height, 1.7 inches. Cheaper kinds of the same fruit are packed in cases containing 90 to 108 pounds of net weight, the fruit being interlayered with straw. The country is not a market for the importation of fresh fruit to any considerable extent.

SOUTH AFRICA

The Cape Town market is supplied with apples, first, from countries in the Northern Hemisphere, including North America and European countries; second, from Australia and Tasmania, and, third, from local fruit farms. The apples from North America arrive here about November 1st and command fair prices for a few weeks only on account of the near approach of the Cape fruit season. Practically all the apples arriving here from the United States are Californian and are shipped from London. Their shipment here is largely a speculation, the prices realized being affected by the supply of South African fruit on this market during November. The packages used are boxes of 100 and more apples and barrels holding about 300 apples. They are the first to arrive here and hence command better prices. The fruit as a rule is appropriated by Cape Town dealers and does not reach inland towns. The varieties best known on the Cape Town market are the King, Ben Davis and California. From 700 to 800 packages, both boxes and barrels, of California apples are received here in a season, and the imports of Oregon and Washington apples are negligible. The California apples bring \$2.43 to \$2.92 per box and \$6.57 to \$7.79 per barrel.

The supply of Canadian apples is the most important from North America. They reach this market late in November and are packed exclusively in barrels. The bulk of the supply is the Russet apple, which is in favor in this market, one reason given being that it does not need to be pared, but can be eaten with comfort unpeeled. Other varieties are received from Canada which appear to be used chiefly in dressing the dealers' windows, among them the Northern Spy. The trade in Canadian apples is relatively small, the price from the jobbers being from \$4.87 to \$7.30 per barrel. The Australians secure the bulk of the trade in imported apples in this district. Their fruit arrives in the month of April, when this market is bare of local supplies, and therefore finds a good market. The apples are usually packed in boxes, containing from 100 to 120. Much of this fruit comes from Tasmania.



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This "Glad Hand" Gauntlet is a fine example of how Hansen's Gloves are built to share your work and make it easy and fast.

Their perfect protection proves that rough work does not mean rough hands. It is also the truest economy—a saving in time, labor and hand-health. Price, \$1.25 up.

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Specially tanned leather, cannot strike or scratch, harden, stiffen or peel. Easily cleaned in gasoline. Gloves for the boys, too. If your dealer is not a Hansen man, write us for book and full information.

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Apples, Pears, Navel Oranges

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A number of the large fruit farms in the Cape Town consular district grow apples which compare favorably in appearance with any grown in the world. But taken as a whole they do not possess keeping qualities. They also do not have the same attractions for the palate as the best imported apples. There are ample cold-storage facilities in Cape Town for ten times the present trade in apples. The total imports of fresh fruit for 1912, including apples, into the Union of South Africa were valued at \$112,776, the United States supplying only \$6,409 worth. The method of distribution of fruit to the retail trade in this market is generally by public auction at the municipal market, though in some instances wholesale houses sell direct from their warehouses. The retail fruit trade in Cape Town is mainly in the hands of Greeks.

VENEZUELA

Apples of good quality are not grown here extensively, and American fruit is much appreciated. Hood River fruit is now being imported into Venezuela during the season, via New York. They are expensive when bought at retail, and for that reason anything that will reduce the expense between the shipper in Oregon and the consumer in Venezuela will tend to widen the market for them. Stocks of Western apples might be maintained at Colon, Panama, and shipped by the French, Spanish or Italian steamers leaving there for La Guaira. This plan might result in their being landed here with less expense than if shipment were made via New York. Western growers have one great advantage in the fact that their apples are well and favorably known, and there is no reason why their sale is not greater other than that the high prices now necessarily charged for the fruit put it out of the reach of all but a small proportion of the would-be consumers.

URUGUAY

Fresh apples and pears are grown locally, also cherries, oranges, peaches and strawberries, but large quantities are imported, such as apples and pears from the United States and New Zealand and cherries from Chile. While the present supply seems to be considerable, the high prices and steady demand would indicate that there was room for more. Apples and pears are imported in boxes or crates containing 100 to 150 each, depending upon the size of the fruit. Special care should be taken in selecting only those in perfect condition, which should be carefully wrapped in paper to insure safe transportation, and be packed in light but strong boxes, well nailed and stripped with iron bands. The fruit should be well colored, sound and of pleasing flavor. Pears, peaches and apricots are imported to some extent, but the market for this class of fruit needs encouraging by the introduction of better goods at moderate prices. The retail price of apples ranges from 60 cents to \$1.00 per dozen, the largest demand being in April or May.



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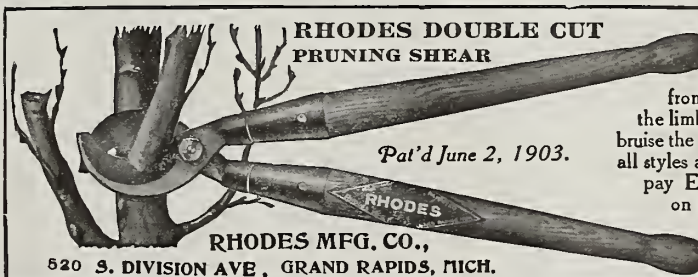
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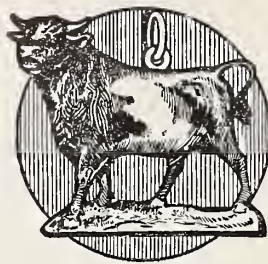
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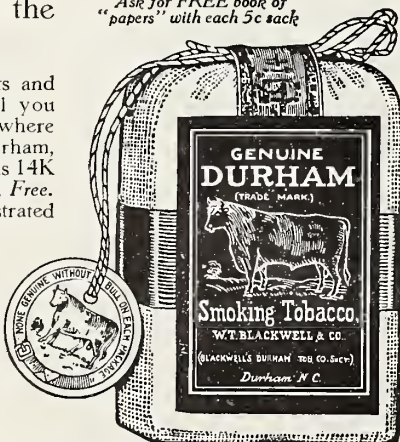
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Send 5 cents and we will mail you prepaid, anywhere in U. S., a 5-cent sack of "Bull" Durham, a Book of cigarette papers, and this 14K gold plated "Bull" Watch Charm, *Free*. We will also send you an illustrated booklet showing how to "roll your own" cigarettes with "Bull" Durham tobacco. In writing, please mention name and address of your tobacco dealer. Address "Bull" Durham, Durham, N. C. Room 1105

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Ask for FREE book of
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Apple Orchard Romance

BEN DAVIS was an awful flirt. He was a TALMAN and handsome, a native of SPITZENBURG, HOLLAND. He became hopelessly smitten on BELL-FLOWER, who looked like a DUCHESS, dressed beautifully in a RUSSET gown. His attention was so SWEET that he made the MAIDEN BLUSH. Now she was engaged to another MANN called JONATHAN. Although a BALDWIN, he was WEALTHY as a KING, and when he was advised of this he SWAAR with rage, turned white as SNOW and nearly took an APPLE-epic fit. He at once engaged a SPY, who soon informed him that he need SEEK-NO-FURTHER for her affections. He immediately left ONTARIO for a NEWTOWN on the ST. LAWRENCE, where he met a ROME BEAUTY and now declares there are NON-SUCH as she.

At the National Apple Show a committee was appointed to organize a Northwest Deciduous Protective League, an organization for the benefit of the fruit industry in general, somewhat similar to the Citrus League of California. The first meeting of the committee was held in Spokane in February. Mr. N. C. Richards of North Yakima was elected president of the league and Mr. J. Gellatley of Wenatchee secretary. Good progress is reported and steps are being taken to formulate some plan of organization and finance which will meet with universal approval of the growers. If all shipping concerns and associations would agree to contribute a nominal amount per car the matter of financing would be comparatively simple. It is hoped and believed that such arrangement can be made.

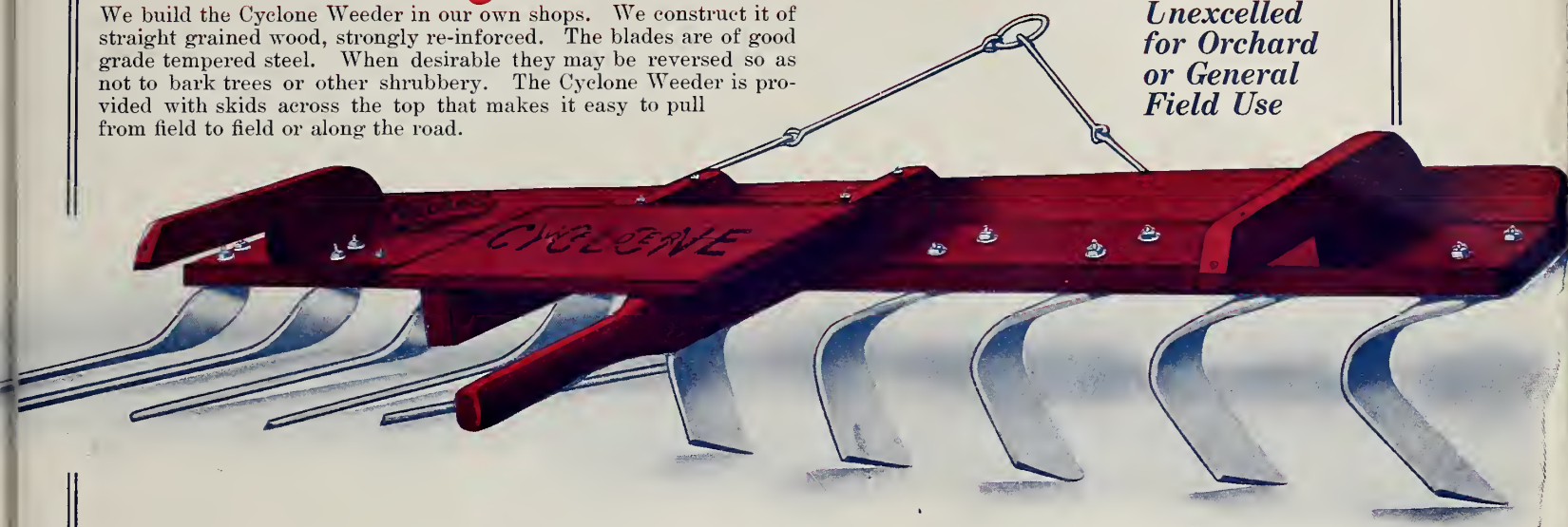
The loganberry growers held an important meeting in Salem March 14th. A large number of growers were in attendance. Some splendid work was done in perfecting an organization, which will take steps to standardize the product, not only the fresh fruit but the canned berries, all juices, jams and jellies, so that they will reach the consumer in first-class condition, with the quality up to representation in every respect. It is the intention to create a bureau of statistics and ascertain definitely the amount of acreage, marketing conditions and to assist in the advertising and distribution of the crop.

Importations of Avocado or Alligator pears, in some instances, have shown the presence of an injurious insect known as the Avocado weevil, consequently the Department of Agriculture has issued instructions that all such importations shall be properly inspected in accordance with inspection laws pertaining thereto.

New Cyclone Weeder

We build the Cyclone Weeder in our own shops. We construct it of straight grained wood, strongly re-inforced. The blades are of good grade tempered steel. When desirable they may be reversed so as not to bark trees or other shrubbery. The Cyclone Weeder is provided with skids across the top that makes it easy to pull from field to field or along the road.

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THE WORLD

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Apples in Boxes

The biggest element of value in the Northwestern box apple to everybody concerned is **STABILITY**.

Growers have not only made it standard by methods of culture and packing far beyond anything previously known in connection with the fruit, but have provided a complete range of standard varieties that makes the product staple in the market all year round, and over a large part of the world.

It is this element of **STABILITY** more than anything else that gives the Northwestern box apple the preference with purchasers of fine table fruit. It is bought for its trustworthy standards as much as for its quality, and proof of this is found in the fact that any lowering of standards would quickly destroy the trade.

STABILITY is the biggest element of value in the Northwestern box apple **TRADE**.

For with a standard product the true merchant can step in and perform his service. Mercantile service is as indispensable to producer and consumer as the service of transportation. For the true merchant cultivates the demand. He finds it, stimulates it, conserves it, increases it. He deals with the purchasing public at close range and makes good any falling off in the standards, accidental or otherwise. He combines the best in one product with the best in allied products, making himself a permanent trade center to which the purchasing public will find it most convenient to turn year after year, not only for supply, but for responsibility. And he holds the producer up to the present standards and constantly sets new ones before him.

In connection with the Northwestern box apple,

STEINHARDT & KELLY

have performed the function of true merchants.

To the purchasing public they bring the best fruit the world affords.

And to the grower who realizes the immense importance of **STABILITY** and who has seen the demoralizing effects of speculative marketing, they offer an outlet that is available year after year, of ever-growing capacity, and which more than anything else, possibly, has established for the best packs of Northwestern box apples those rational, non-speculative f.o.b. prices which are absolutely necessary for the future growth of the trade.

There will always be fashions in marketing, and it will always be in human nature to demand that new experiments be tried.

STEINHARDT & KELLY

believe, however, that the growers in the Northwest who see furthest, understand the mercantile trend of the trade as clearly as themselves, and that therefore they can continue to depend upon the co-operation of the grower who conducts his plant as a staple business for the fine fruit that is necessary in extending their trade as a staple business.

Steinhardt & Kelly
NEW YORK

OUR MARKET

THE WORLD